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BOOK OF THE YEAR

1939

Being a survey of the principal persons, events, and developments in various spheres of knowledge and affairs during the year 1938

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PREFACE

THIS is the second of the series of year books forming annual supplements to the Encyclopædia Britannica; the first was launched last year and warmly received. It is hoped that this volume will prove as useful as its predecessor.

So rapidly have events moved in the last few months, and so closely have consequence and fulfilment trod on the heels of cause and prophecy, that the editors think it imperative to emphasize that this book is a contemporary survey of men and affairs during the year 1938. The closing scenes especially are depicted, not in retrospect and with foreknowledge of what was to come, but as they appeared at the time to the audience then witnessing the performance.

There are, on the other hand, some fields of human activity where changes and discoveries are of such slow growth, or require so much time and patience to bring to fruition, as to make it unsatisfactory to record the almost imperceptible alterations from year to year. The editors will therefore cover the entire range of such activities over a number of years; in each annual record summarizing the developments for several years in a selected portion of the field.

In conclusion, the editors venture to hope that they have succeeded in their efforts—never easy and this year more difficult than ever—to present an impartial, temperate, and factual record of the year under review, free from the passions and partizanships which the events naturally aroused. The measure of success achieved in this respect would have been impossible without willing support from individual contributors, to all of whom a tribute of most grateful thanks is offered for their tolerance, judgment, and unsparing expenditure of time and labour.

M. D. LAW.

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H. E. C.	H. E. A. CONDON. Assistant Principal Clerk, Statistics and Intelligence, Inland Revenue, London.	**Income-tax** (*in part*).
H. E. H.	HARRISON E. HOWE, M S., Sc D , LL.D. Editor of *Industrial and Engineering Chemistry*, Washington.	**Chemistry, Applied.**
H. E. R.	H E. RAYNES, F I A., F.C I.I. Vice-President of the Institute of Actuaries ; Deputy Chairman, Life Offices' Association ; Actuary to the Legal and General Associate Society.	**Life Insurance** (*in part*).
H. Fw.	HUBERT FITCHEW. Editorial staff, *Encyclopædia Britannica*, 14th edition ; Musical contributor and reviewer of *The Sunday Times* ; reviewer and sometime assistant editor of *The Architects' Journal.*	**Belgium ; Denmark ; Foundations and Trusts ; etc.; etc.**
H. G. F.	H. GRANVILLE FELL. Editor of *The Connoisseur.*	**Art Exhibitions** (*in part*) ; **Art Sales** (*in part*).
H. J. Re.	BRIGADIER-GENERAL HENRY J. REILLY, O R C., D S.M Author of *Why Preparedness?* ; *America's Part* ; etc.	**Armies of the World.**
H. Lo.	HENRY LONGHURST, B.A (Cantab). Golf correspondent to *The Evening Standard*, *The Sunday Times* and *The Tatler.* Author of *Golf* ; *Go Golfing* (with Archie Compston).	**Golf** (*in part*).
H. Pe.	HARRY PRICE. Honorary Secretary and Editor, University of London Council for Psychical Investigation ; Member of Scientific Council, American Psychical Institute, New York.	**Psychical Research.**
H. P. P.	SIR HENRY P. PRICE. Chairman and Managing Director of Prices Tailors Ltd. and Associated Companies.	**Clothing Industry** (*in part*).
H. S. T.	H. STUART TOWNEND, M.A. General Secretary of the Hotels and Restaurants Association of Great Britain.	**Hotels, Restaurants, and Inns.**
H. V. H.	HENRY VINCENT HODSON, M.A. Editor of *The Round Table*, London.	**Australia** (*in part*) ; **Balance of Trade ; Financial Review ; etc. etc.**
H. V. K.	H. V. KALTENBORN, A B. News Editor, Columbia Broadcasting System, New York.	**Broadcasting** (*in part*).

J. Mh.	JAMES MACKINTOSH, O B E , N D A , N D D. Head of Dairy Husbandry Department, National Institute for Research in Dairying, University of Reading.	**Dairy Farming and Dairy Produce** (*in part*).
J. R. L.	LIEUT.-COMDR JOHN RAWSON LUMBY, R N (Retd). Naturalist in the Ministry of Agriculture and Fisheries.	**Oceanography.**
J. Se.	JAMES STENNER Speedway and Ice Hockey Correspondent of *The Evening News*, London.	**Speedway Racing.**
J. T. Ar.	JOHN TAYLOR ARMS, M S. President, Society of American Etchers.	**Etching.**
J. T. I.	J. T INGRAM, M D., F R C P Physician in Charge of the Skin Department, General Infirmary, Leeds ; Lecturer on Skin Diseases, University of Leeds.	**Skin Diseases.**
J. W. Sc.	JAMES WALTER SCHADE, A B Director of Research, The B F. Goodrich Company, Akron, Ohio	**Rubber and Rubber Manufacture** (*in part*).
J. Y.	JAMES YOUNG, D S O , M D. Professor of Obstetrics and Gynæcology, University of London ; Director of Obstetric and Gynæcological Department, British Postgraduate Medical School, London.	**Gynæcology and Obstetrics.**
K. F. L.	KATHARINE F LENROOT, B A. Chief of the Children's Bureau, United States Department of Labor.	**Child Welfare** (*in part*).
K. I.	K INGRAM. Barrister-at-Law. Author of *The Coming Civilisation ; Christianity—Right or Left ? The Christian Challenge to Christians* ; etc. Editor of *The Green Quarterly*, 1924–37.	**Religion and the State.**
K. Wi.	KENNETH WILLIAMS, B A Editor of *Britain and The East.* Author of *Ibn Saud : The Puritan King of Arabia.*	**Arabia.**
L. A. L.	LEROY A. LINCOLN. President, Metropolitan Life Insurance Company.	**Life Insurance** (*in part*).
L. A. W.	L. A WILLOUGHBY, M A , D Litt , Ph.D. Professor of German in the University of London ; Honorary Secretary of the English Goethe Society. Editor of *German Life and Letters.*	**German Literature.**
L. E. L.	LEWIS E LAWES. Warden of Sing Sing Prison, New York	**Penal Reform** (*in part*).
L. G. M.	LEONARD G. MONTEFIORE, M A , O B.E. President of the Anglo-Jewish Association.	**Anti-Semitism.**
L. H. D.	LAWRENCE HAWKINS DAWSON. Member of the editorial staff, 14th edition, *Encyclopædia Britannica.* Author of *A Short Guide to Chess ; Introduction to London* , etc. Editor of *Routledge's Universal Encyclopædia ; The March of Man* ; etc. etc.	**Chess ; Local Government ; Newspapers** (*in part*) **; etc. etc.**
L. L.	LESLIE. LEWIS. Editor of *The Furnishing World* ; Editorial Director of *The Furniture Manufacturer.*	**Furniture Industry.**
L. L. M.	GROUP-CAPT. L. L. MACLEAN. Great Britain's air representative at the League of Nations, 1933–35 ; Senior Air Staff Officer, No. 3 (Bomber) Group, Andover and Mildenhall (England), 1936–38.	**Air Forces.**
L. M. F.	LEONARD M. FANNING. Publisher of Petroleum Code Handbook, 1931–34. Author of *The Rise of American Oil.*	**Petrol** (*in part*) **; Petroleum.**
L. O. P.	LOUELLA O. PARSONS. Motion Picture Editor, International News Service.	**Motion Pictures** (*in part*).
L. R. M.	L. R. MCINTYRE, B A.(Oxon). Tasmanian Rhodes Scholar, 1933.	**Australian Literature.**
L. W. Be.	LEWIS W. BEALER, Ph.D. History Department, University of Oklahoma.	**Argentina ; Chile ; Pan-American Conference ; etc. etc.**
L. Wo.	LEO WOLMAN, D Ph. Professor of Economics, Columbia University, New York.	**Trade Unions** (*in part*).
L. W. T.	L. W. TAYLOR, M.A. Secretary, Headmasters' Conference, London.	**Public Schools** (*in part*).
M. A.	MARC ANCEL. Secrétaire Général de l'Institut de Droit comparé de l'Université de Paris ; Secrétaire Général de la Première Présidence de la Cour de Cassation.	**Law and Legislation** (*in part*).
M. B.	MARGARET BRYANT. Member of the staff of the Refugee Survey, London.	**Political Migration and Refugee Movements.**
Me.	JAMES SCORGIE MESTON, 1ST BARON MESTON of Agra and Dunottar, K.C.S.I., LL.D. Secretary to Finance Department, Government of India, 1906–12 ; Lieut.-Governor, United Provinces of Agra and Oudh, 1912–17.	**Burma ; India ; Liberal Party, The ; etc. etc.**
M. E. A.	THE REV. M. E AUBREY, C H , M A. General Secretary of the Baptist Union of Great Britain and Ireland since 1925.	**Baptist Church; Protestantism, Non-Episcopal.**
M. R.	MARY ROSSI. Member of the Young Women's Christian Association, International Staff, Geneva.	**Young Women's Christian Association.**
M. S. E.	MARRINER STODDARD ECCLES. Chairman, Board of Governors of the Federal Reserve System, Washington, D.C.	**Federal Reserve System.**
M. T.	MICHAEL TIERNEY, M A. Professor of Greek, University College, Dublin. Member of Dáil Eireann, 1925–32.	**Eire.**
N. As.	SIR NOEL ASHBRIDGE, B.Sc. Controller of Engineering, the British Broadcasting Corporation ; Vice-President of the Institution of Electrical Engineers ; Member of Radio Research Board and Television Advisory Committee.	**Radio, Scientific Developments in ; Television.**
N. A. V. P.	NORMAN A. V. PIERCY, D.Sc., M.Inst.C.E., M.I.Mech.E., F.R.Ae.S. Head of the Aeronautical Dept., Queen Mary College, London. Author of *Aerodynamics* and numerous Scientific Papers.	**Aeronautics.**

N. B.	NIELS BOHR, Dr.Phil Professor of theoretical physics at the University of Copenhagen since 1916. Nobel prizewinner in Physics, 1922.	**Matter, Structure of.**
N. C.	NEWCOMB CARLTON, A M. Chairman of the Board, Western Union Telegraph Company, New York; Director, Gold and Stock Telegraph Company.	**Telegraphy.**
N. E. C.	NORMAN E. CRUMP. Statistical Correspondent and regular contributor to *The Financial Times* since 1921. Editor of Lloyd's Bank *Monthly Review* since 1930; Banking Editor of *The Economist* until 1937. Author of *A First Book of Economics.*	**Banking** (*in part*); **Exchange Rates; Exports and Imports; etc.**
N. F.	NORMAN FRENCH. Editor of *The Timber Trades Journal and Sawmill Advertiser.*	**Timber** (*in part*).
N. Ha.	NICHOLAS HANS, Ph D., D Lit Lecturer in Education at the Froebel Society, London, and Adviser in Educational Research to the *Yearbook of Education*, London. Author of *Comparative Study of European Education*; *Educational Traditions in the English-speaking Countries*; etc.	**Education** (*in part*).
N. H. F.	N HAMILTON FAIRLEY, O.B E., M D, D.Sc. Physician and Director of Special Research, Hospital for Tropical Diseases, London.	**Tropical Diseases.**
N. Ke.	NORMAN KEEP, F R I B A. Head of the Senior Day School and Evening Building Department, London County Council School of Building.	**Building and Building Industry** (*in part*).
N. M.	N. MCINTYRE. Secretary to the Publications Department, the Girl Guides Association, London.	**Girl Guides.**
N. Ma.	NEDELLA MACARTNEY. Correspondent to the *Zora* (Bulgaria); sometime correspondent to the *Mir* (Bulgaria).	**Balkan Literature.**
O. J. R. H.	O. J. R HOWARTH, O B E, M A.(Oxon), Hon Ph D.(Leeds) Secretary of the British Association. Author of *The British Association: A Retrospect 1831–1931*; etc. etc.	**British Association for the Advancement of Science.**
P. D. W.	PAUL D WHITE, M D. Lecturer on Medicine, Harvard University Medical School, Boston, Massachusetts.	**Heart and Heart Diseases.**
P. F.	P. FITZGERALD Editor of *The Statist.*	**Diamonds; Gold.**
P. G. H. F.	PERCY G. H. FENDER. Surrey and England Cricketer; captain of Surrey County Cricket Club, 1921–32. Author of *Defending the Ashes*; etc.	**Cricket.**
P. H. W.	PERCY HENRY WINFIELD, F B A, LL D, F R.Hist S Rouse Ball Professor of English Law, Cambridge University; Of the Inner Temple, Barrister-at-Law; Member of the Lord Chancellor's Law Revision Committee.	**Judicial Decisions; Public Statutes of the United Kingdom.**
P. J. H.	SIR PHILIP HARTOG, K B E., M.A., B Sc. Director of the International Institute Examinations Enquiry, 1932.	**Examinations.**
P. J. S. R.	P. J. S RICHARDSON Editor of *The Dancing Times*; Honorary Secretary of The Royal Academy of Dancing, and Chairman of The Official Board of Ballroom Dancing.	**Dancing** (*in part*).
P. L. Y.	P. L. YATES, M.A. Research Worker in Agricultural Economics.	**Agriculture; Pigs and Bacon; Poultry; etc.**
R. B. D.	R. B. DUNWOODY, C B.E Secretary, Association of British Chambers of Commerce, London.	**Chambers of Commerce** (*in part*).
R. E. Ba.	RUTH E. BAKER, B A., F L.A. County Librarian for Northumberland, England.	**Children's Books** (*in part*).
R. E. Bi.	ROLAND ERNEST BIRD, B.Sc.(Econ.). Stock Exchange Editor of *The Economist*, London.	**Investment Trusts; Stock Exchanges** (*in part*).
R. H. R.	R. H. O. B. ROBINSON, M.B., B.Ch., F.R.C S. Member of the Editorial Board of the British Journal of Urology. Member of the Association Internationale d'Urologie. Author of *Significance of Vesical Diverticula*; *Horseshoe Kidney*; etc.	**Urology.**
R. H. T.	THE REV R. H. TRIBE, M.R.C.S., M.C. Director-General, Society of the Sacred Mission, Kelham, England. Author of *The Christian Social Tradition.*	**Religious Communities** (*in part*).
R. Is.	RAPHAEL ISAACS, M.D. Associate Professor of Internal Medicine, University of Michigan Medical School.	**Anæmia.**
R. J. A.	R. J. ARNOTT, M.A. Associate Editor, *Canada's Weekly*, London.	**Forestry and Reforestation** (*in part*); **National Parks** (*in part*); **etc. etc.**
R. J. P.	R. J. PUMPHREY, M.A, Ph.D. Beit Memorial Research Fellow; lately University Demonstrator in Zoology at Cambridge.	**Zoology.**
R. McG.	RAYMOND MCGRATH, B.Arch., A R.I.B.A. Decoration Consultant to the B.B.C., 1930–33; Member, Art Committee R.I.B.A. Author of *Twentieth Century Houses* and co-author of *Glass in Architecture and Decoration.*	**Interior Decoration.**
R. M. F. P.	RALPH M. F. PICKEN, B.Sc., M.B., Ch B, D.P H. Mansel Talbot Professor of Preventive Medicine, University of Wales; Chairman, Public Health Committee, British Medical Association.	**Epidemiology** (*in part*); **Public Health Services** (*in part*).
R. N. F.	THE REV. NEWTON FLEW. Principal, Wesley House, Cambridge.	**Methodist Church, The.**
R. Ph.	RALPH PHILLIPS, M.S., M.B.(Lond.), F.R.C.S.(Eng.), D.M.R.E.(Cantab.). Halley Stewart Fellow, St. Bartholomew's Hospital, London.	**Radiology.**
R. Pin.	RENÉ PINON. Professor in the School of Political Science, Paris. Foreign Editor of the *Revue des Deux Mondes*, Paris.	**France; Indo-China; Paris; etc.**
R. R. K.	R. R. KUCZYNSKI, Dr.Sc.Pol. Reader in Demography in the University of London.	**Vital Statistics.**

R. R. N.	ROBERT R NATHAN Chief of National Income Section, Bureau of Foreign and Domestic Commerce, U.S. Department of Commerce, Washington.	**National Debts; National Income.**
R. R. R.	R. R RUSK, M.A, Ph D. Principal Lecturer in Education to the Glasgow Provincial Committee for the Training of Teachers; Director to the Scottish Council for Research in Education. Author of *Experimental Education*; etc. etc.	**Education, New Methods in.**
R. S.	ROBERT STOKES. Secretary, Press and Publications Board, Church Assembly, London.	**Anglican Communion** (*in part*); **Church of England.**
R. S. K.	R S. KENNEDY, B Sc. Book Editor, *Family Herald and Weekly Star*, Montreal, Canada.	**Canadian Literature.**
R. S. T.	ROBERT SCOTT TROUP, C M G, C I E, M A, D Sc., F.R S. Professor of Forestry, University of Oxford, 1920– ; Director, Imperial Forestry Institute, 1924–35. Author of *Silviculture of Indian Trees*; *Exotic Forest Trees in the British Empire*; etc.	**Forestry and Reforestation** (*in part*).
R. T. C.	R T COLGATE, D Sc Chief Chemist of Huntley & Palmers Ltd., Reading, England.	**Bread and Bakery Products.**
R. W.	RENE WELLEK, Ph.D. Lecturer at the University of Prague. Research Fellow in Czechoslovak, School of Slavonic and East European Studies, University of London.	**Czech Literature.**
S.	JOSIAH STAMP, 1ST BARON STAMP, G B E., D Sc, LL D, F B A Chairman and President of the Executive, London, Midland, and Scottish Railway; Director of the Bank of England. Author of *Wealth and Income of the Chief Powers*; *Wealth and Taxable Capacity*; *The National Capital and Other Statistical Studies*; etc.	**Taxation.**
S. A. He.	STEPHEN ALFRED HEALD, B.A (Oxon) Secretary, Information Department, The Royal Institute of International Affairs, London. Editor of annual volume of *Documents on International Affairs*.	**League of Nations; Mandates; Permanent Court of International Justice.**
S. A. M.	S A MITCHELL, F.C I I. Author of various articles on Fire Insurance.	**Fire Insurance.**
S. E. D.	S E. DAVIES. Member of the Executive of the Nursery School Association of Gt. Britain; Formerly H.M. Inspector of the Board of Education.	**Nursery Schools** (*in part*).
S. E. J.	STANLEY EDWARD JACOBS, B Sc, A R C S, Ph D. Lecturer in Bacteriology at the Imperial College of Science and Technology, and at Sir John Cass Technical Institute, London. Author of various papers on Soil Bacteriology.	**Bacteriology.**
S. H. R.	STEPHEN H ROBERTS, M.A., D.Sc. Challis Professor of Modern History, University of Sydney, Australia, since 1929.	**Berlin; Danzig; Germany; Memel Territory.**
S. J. W.	SIDNEY JOHN WORSLEY, D S.O., M C., T D. Academic Registrar, University of London, since 1930, and Acting Principal, 1936–37.	**London University.**
S. Lea.	STEPHEN LEACOCK, Ph D., Litt.D., LL.D., D.C.L. Professor Emeritus, McGill University, Montreal.	**Canada.**
S. R.	S. RAWIDOWICZ, Ph.D. Lecturer in Hebrew Philosophy, School of Oriental Studies, University of London. Author of many books on general and Jewish philosophy and literature; co-editor of the *Quarterly Hatekufah*, etc.	**Hebrew Literature.**
S. S.	STEN SELANDER Literary and dramatic critic for *Svensk Dagbladet*. Author of several collections of poetry and essays.	**Scandinavian Literature.**
S. S. H.	S. H. HUEBNER, Ph.D., Sc.D. Professor of Insurance and Commerce, Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia.	**Stock Exchanges** (*in part*); **Stocks and Shares** (*in part*).
S. Yak.	SERGEI YAKOBSON, D.Phil.(Berlin). Librarian and Hon. Lecturer in Russian History at the School of Slavonic and East European Studies, London. Editor of *Minerva*, 1929–31.	**Russian Soviet Federated Socialist Republic; U.S.S.R.; etc. etc.**
T. B.	THOMAS BEACH. Principal, Kilburn Polytechnic, London. Author of *The Collaboration of Education and Business*; joint author of *Business Economics*.	**Technical Education** (*in part*).
T. Be.	THOMAS BEDFORD, D.Sc., Ph.D. Investigator to the Medical Research Council's Industrial Health Research Board. Author of *Modern Principles of Ventilation and Heating*; *The Warmth Factor in Comfort at Work*; etc.	**Industrial Hygiene.**
T. C.	TERENCE CAWTHORNE, F.R.C.S. Assistant Surgeon for Diseases of the Ear, Nose and Throat, King's College Hospital; Assistant Aural Surgeon, the National Hospital for Nervous Diseases; Consulting Surgeon to the Endoscopic Unit, London County Council's General Hospitals Service.	**Ear, Nose and Throat, Diseases of.**
T. Cr.	THOMAS CRAVEN. American Art Critic. Author of *Men of Art*; *Modern Art*; etc.	**Painting** (*in part*).
T. E. O.	T. E. OSMOND, B.A., M.B. Pathologist, V.D. Department, St. Thomas's Hospital, London; Vice-President, Medical Society for Study of Venereal Disease.	**Venereal Diseases.**
T. J. H.	T. J HAARHOFF, B.Litt, Litt.D.(Amst.). Professor of Classics in the University of Witwatersrand, Johannesburg.	**South African Literature.**
T. P. McM.	T. P. McMURRAY, M.Ch, F.R.C.S. Director of Orthopædics and Lecturer in Orthopædic Surgery, Liverpool University; Honorary Orthopædic Surgeon, David Lewis Northern Hospital.	**Orthopædics and Fractures.**
T. S.	TOM STAVELEY, M.A Assistant Master, Tonbridge School, England; late Professor of History, Reed College, Portland, Oregon, U.S.A.	**Conservative Party, The; Freemasonry.**
T. S. A.	T. S. ANDERSON, D.D.S., Penn.H.D.D., R.F.P. & S., L.D.S., R.C.S.Ed. Late Radiologist, Settlers Hospital, Eastern Province, South Africa.	**Dentistry.**

T. T.	TERRY THOMAS, M A , LL B , B.Sc , Ph D , J P Headmaster of Leeds Grammar School; President of the Headmasters' Association, Great Britain, 1936	**Secondary Education** (*in part*).
V. B.	VICTOR BRODSKY. Labour and Industrial Correspondent of *The News of the World*, London.	**Arbitration, Industrial; Crime** (*in part*); **Juvenile Delinquency; etc.**
V. G. C.	V. GORDON CHILDE, D Litt , D Sc , F S A , F R.S Ed. Abercromby Professor of Prehistoric Archæology, University of Edinburgh. Author of *The Dawn of European Civilization*; *New Light on the Most Ancient East*; *The Prehistory of Scotland*, etc.	**Archæology** (*in part*).
V. R.	VIOLA I RIPLEY, B Sc. Assistant Lecturer in Biology, Huddersfield Technical College, 1926–28. Author of numerous articles on canoeing and camping.	**Botanical Gardens; Science Museums; Zoological Gardens; etc.**
W. A. Ha.	WILLIAM A HAMOR. Assistant Director of Mellon Institute of Industrial Research.	**Industrial Research.**
W. E. S.	W. E. SWINTON, Ph D , B.Sc , F.R S E Assistant Keeper, Department of Geology, British Museum Author of *The Dinosaurs*; *Guide to the Fossil Birds*; *Reptiles and Amphibians in the British Museum*, etc.	**Palæontology.**
W. F. B.	WALTER F BOGNER. Associate Professor of Architecture, School of Design, Harvard University.	**Architecture.**
W. F. G.	W. F. GERICKE. Assistant Professor, Soil Chemistry, University of California.	**Hydroponics.**
W. G.	WILLIAM GUNN, M.A., M.B., Ch B , M.R C P , D P.H. Medical Superintendent, North-Western Hospital (London County Council).	**Infectious Diseases, Acute.**
W. G. C.	W. G. CLIFFORD Editor of *Billiards and Snooker*, London.	**Billiards and Snooker.**
W. H. Al.	WILLIAM HARVEY ALLEN, Ph D. Director, Institute for Public Service, New York.	**New York City.**
W. H. Ch.	WILLIAM HENRY CHAMBERLIN Chief Far Eastern Correspondent, Tokyo, for *The Christian Science Monitor*.	**China; Japan; Manchukuo; Sino-Japanese War; etc.**
W. H. McC.	WILLIAM HUNTER MCCREA, M A., Ph.D , B Sc , F.R S E Professor of Mathematics in Queen's University, Belfast; Sometime Isaac Newton Student of Cambridge University. Co-editor of the *Observatory*; author of *Relativity Physics*.	**Astronomy.**
W. H. T. L.	CAPTAIN W. H T. LONG. "Scolopax" of the *Shooting Times*; contributor on Shooting matters to the *Illustrated Sporting and Dramatic News* and other publications.	**Game Shooting.**
W. Hu.	W. HUBBALL. Editor of *The Silk Journal and Rayon World*, Manchester.	**Rayon; etc.**
W. H. W.	W. H. WILLSON, B.Sc.(Econ.). Author of *Markets of the Empire*; *Empire Trade*.	**Australia** (*in part*); **France** (*in part*); **Germany** (*in part*); **Great Britain** (*in part*); **etc.**
W. I. K.	WILLFORD I. KING, Ph D Professor of Economics, New York University.	**Purchasing Power of Money.**
W. J. C.	WILLIAM J. CUNNINGHAM, A M Professor of Transportation, Harvard University, Graduate School of Business Administration, Boston.	**Railways** (*in part*).
W. J. R.	W. J ROSE, Ph.D , M A. Professor of Polish Language and Literature in the University of London. Author of *Stanislas Konarski, Preceptor of Poland*; *The Drama of Upper Silesia*.	**Poland; Polish Literature; Warsaw.**
W. J. T.	WILLIAM JOHN TYDEMAN, A.M.I.Mech E. Publicity Manager, Associated British Machine Tool Makers, Limited. Editor of *British Machine Tool Engineering*.	**Machinery and Machine Tools.**
W. K. F.	W. K. FITCH. Editor, *The Pharmaceutical Journal*, London.	**Pharmacy and Pharmaceutical Products.**
W. M. Ci.	SIR WALTER MCLENNAN CITRINE, K.B.E. General Secretary of the British Trades Union Congress; President of the International Federation of Trade Unions. Author of *The British Trade Union Movement*; etc.	**Trades Union Congress.**
W. O. L. S.	W. O LESTER SMITH, M.A. Director of Education for Manchester.	**Education: Administration and Finance.**
W. R. D.	SIR W REID DICK, K.C V O , R.A. King's Sculptor in Ordinary since 1938.	**Sculpture** (*in part*).
W. S. G.	WALTER S. GIFFORD, A.B., LL D. President, American Telephone and Telegraph Company, New York.	**Telephones.**
W. T. E.	THE REV. W. T. ELMSLIE, M.A General Secretary of the Presbyterian Church of England.	**Presbyterian Church** (*in part*).
W. T. M.	THE RT. REV. WILLIAM T. MANNING, D.S.L., LL.D. Bishop of New York.	**Anglican Communion** (*in part*).
W. T. St.	W. TETLEY STEPHENSON, M A. Cassel Reader in Transport at the London School of Economics and Political Science.	**Motor Transport.**
W. T. We.	W. T. WELLS, B A.(Oxon). Formerly Oxford University Extension Lecturer in History and Political Theory.	**National Service; Rearmament, British; World Armaments; etc.**
X.	INITIAL USED FOR ANONYMOUS CONTRIBUTORS.	
Y. H.	YRJO HIRN, D.Ph. Professor Emeritus of Æsthetic and Modern Literature at the University of Helsingfors. Author of *The Origins of Art*; *The Sacred Shrine*; *Les Jeux d'Enfants*; etc.	**Finnish Literature.**
Z. F. W.	Z. F. WILLIS. Assistant General Secretary, The Young Men's Christian Association, London.	**Young Men's Christian Association.**

DIARY OF EVENTS

From January 1st, 1938—January 31st, 1939

1938

Jan. 1 · **United Kingdom.**—Royal assent was given to the Air Raid Precautions Act.

Sir Robert Vansittart was appointed to the new post of Chief Diplomatic Advisor in the Foreign Office.

France.—The French National Railway Company took over the whole railway system of France.

Estonia.—The new constitution came into force.

Rumania.—Parliament was dissolved by M. Goga, the Premier.

Sino-Japanese War.—General Chiang Kai-shek handed over the Premiership to Mr. H. Kung, Minister of Finance, in order to devote himself to his duties as Commander-in-Chief of the Chinese forces

Jan. 2: **United Kingdom.**—An official statement was made of gold holdings in the Exchange Equalization Account.

France.—The French Budget for 1938 was adopted in a final compromised form

Spanish Civil War.—Barcelona was raided by Nationalist bombers, 49 people being killed.

Sino-Japanese War.—The reported Japanese peace terms were unacceptable to the Chinese Government.

Jan. 3: **United Kingdom.**—Arabic broadcasts by the B.B.C. were inaugurated by H.H. the Emir Seif-ul-Islam Husain, son of the King of the Yemen.

Jewish Problems.—In London, British Zionist leaders unanimously opposed the enforcement of a permanent Jewish minority in Palestine, and supported proposals for a Jewish State to be brought within the British Empire.

United States.—Mr. Roosevelt outlined the internal policy and the general international situation.

Egypt.—Dr. Ahmed Maher, the President of the Chamber, was expelled from the Wafdist Party. A new Wafdist political group, the "Saadist Wafdist Party", was formed. The King prorogued Parliament.

Jan. 4: **Palestine.**—A White Paper clarified Britain's policy in Palestine.

Rumania.—Rumania's loyalty to treaties with France, Poland, the Balkan and Little Ententes was announced.

Sino-Japanese War.—Incidents in the International Settlement at Shanghai were followed by Japanese demands for extended control there.

Jan. 5: **United Kingdom.**—A committee was formed to simplify highway laws.

Rumania.—Representatives of the World Jewish Congress at Geneva protested against the growth of anti-semitism in Rumania

United States.—In his Budget Message to Congress, Mr. Roosevelt estimated a deficit of £190 millions. Defence appropriations totalled £197,724,000.

Germany.—A new Zeppelin airship was ordered.

Spanish Civil War.—A Government decree allowed thirty days for the civil population to leave Madrid.

Jan. 6 · **Spain.**—The "Institute of Spain", a new body to be the arbiter of intellectual and cultural life, was inaugurated at Salamanca

Rumania.—Rumania accorded a "de facto" recognition to the Italian Empire in East Africa

Sino-Japanese War.—Hangchow was subjected to Japanese bombing attacks.

Jan. 7 **Italy.**—A new naval building programme was adopted

United States.—Mr. Joseph P. Kennedy was appointed ambassador to Great Britain; Mr. Hugh R. Wilson, ambassador to Germany

Spanish Civil War.—Teruel fell entirely into government hands

Sino-Japanese War.—Japanese attacks on British police officers increased the tension in the International Settlement at Shanghai.

Jan 8: **Sudan.**—Under the terms of the Anglo-Egyptian Treaty, Egyptian troops re-entered the Sudan, whence they were withdrawn in 1924

Eire.—The Italian Empire in East Africa was accorded "de facto" recognition by Eire.

Jan. 9: **France.**—The Ministry of National Defence issued a decree increasing official control of war material.

Greece.—Prince Paul, Heir-Presumptive to the throne, was married at Athens to Princess Frederika of Hanover.

Jan 10: **Poland.**—General Skwarczynski succeeded Colonel Koc in the leadership of the "National Unity Camp".

Italy.—The text of the Treaty of Friendship between Italy and the Yemen was published in Rome

Soviet Union.—Several prelates of the Orthodox Church of Russia and other clergy were arrested on charges of "treason" and "subversive activities".

United States.—The House of Representatives rejected a proposed Constitutional amendment vesting in referendum the power to declare war in all cases save that of invasion.

Palestine.—The distinguished British archæologist, Mr. J. L. Starkey, fell victim to terrorist outrages.

Jan. 11 · **United Kingdom.**—The General Council of the Trade Union Congress considered the formation of a Trade Union for domestic servants.

Miss Margery Fry was appointed a Governor of the B.B.C. for five years.

Aviation.—The "Samoa Clipper" was wrecked in the Samoan Islands; seven perished.

Jan. 12: **Soviet Union.**—The Government requested parity of consular posts. The new Parliament met for the first time.

Rome Protocols.—Austria, Hungary, and Italy announced the continuance of a policy in accordance with the Rome Protocols.

Aviation.—Reduced postal charges on the England-India route came into force.

France.—M. Dornoy, the Minister of the Interior, made a public accusation against the "Comité Secret d'Action Révolutionnaire" (Cagoulards)

Jan. 13 · **Egypt.**—General Aziz Ali Pasha was appointed Inspector-General of the Army.

International Federation of Trade Unions.—Negotiations between the I.F.T.U. and the Russian Trade Unions for a "united front against war and fascism" broke down.

New Zealand.—A trade agreement was concluded with the Netherlands.

France.—A crisis in the French Cabinet followed M. Chautemps' criticism of his socialist supporters.

Jan. 14: **France.**—M. Chautemps handed in his Cabinet's resignation.

Jan 15: **Rugby Football.**—Wales beat England at Cardiff by 14–8

Soviet Union.—Government forbad payments to Italian firms.

Antarctic Research.—The principal geographical feature discovered by the British Graham Land Expedition was named King George VI Sound.

United Kingdom.—Mr. de Valera and three Irish Ministers visited London to confer on Anglo-Irish relationships.

Germany.—M. Stoyadinović, the Yugoslav Premier, visited Berlin.

Jan. 16 · **Rumania.**—Two petitions against the Rumanian Government's anti-semitic measures were received by the League Council.

International Federation of Trade Unions. At a joint meeting in Brussels a boycott of Japanese goods, while the Japanese forces occupied the Chinese Republic, was recommended.

Turkey.—A new Stock Exchange was created at Ankara; the Istanbul Exchange was closed.

Sino-Japanese War.—Prince Konoye declared that Japan would negotiate only with the Provisional Government at Peking.

Jan. 17: **United Kingdom.**—Anglo-Irish conversations began.

Soviet Union.—Mikhail Kalinin was re-elected to the Presidency; eleven vice-presidents, one from each republic of the Union, were also chosen.

Venezuela. A hitherto unknown waterfall (the highest in the world) was discovered in south-eastern Venezuela.

Jan. 18: **Rumania.**—Parliament was dissolved. Jews were forbidden to vote in the elections for the new Parliament.

France.—The Cabinet crisis was resolved, M. Chautemps forming a new administration.

Spanish Civil War.—Ten persons were killed during a Nationalist raid on Valencia.

United Kingdom.—The annual meeting of the National Farmers' Union opened.

United States.—Navy appropriation provided for the construction of two new battleships and twenty other warships.

Jan. 19: **Aviation.**—Twenty U.S. nava bombers completed the longest ocean

formation flight on record, from California to Hawaii.

Soviet Russia.—M Vlacheslav Molotoff formed a new Council of People's Commissars

United Kingdom.—The Convocation of Canterbury opened at Westminster Abbey, and the Convocation of York at St William's College, York

Jan. 20 **Egypt.**—The marriage of H M. King Farouk of Egypt with Mlle Farida Zulficar took place at the Koubbeh Palace in Cairo

United Kingdom.—Mr de Valera and his colleagues returned to Dublin

France.—Sixty-three persons were arrested in connexion with the "Cagoulard" conspiracy

Spanish Civil War.—A Nationalist raid on Barcelona caused sixty deaths. The British steamer "Thorpeness", at anchor in the harbour, was hit, and seven men were killed

Jan 21 **France.**—M. Chautemps' new government obtained the support of the Chamber of Deputies by 501 votes to 1.

Rumania.—The People's Party, led by General Averescu, was fused with the National Christian Party, with General Averescu and Professor Cuza as joint presidents Anti-semitic measures continued

Archæology.—Important discoveries were announced by Mr Walter Emery, the British archæologist, at Sakkara, in the Nile Valley

Turkey.—A new commercial and compensation agreement with Rumania was announced.

United States.—Sixteen oil companies were convicted under the anti-trust laws of criminal conspiracy to raise and fix prices of petrol during 1935 and 1936.

Greece.—The 150th anniversary of the birth of Byron was celebrated.

Boxing.—Tommy Farr, the British heavyweight champion, lost on points to the American, James J. Braddock, in a ten-round contest at New York.

United Kingdom.—In a railway collision near Bedford, 34 persons were injured and one killed.

Jan. 23 **Skating.**—Miss Cecilia Colledge, the seventeen-year-old British amateur skating champion of the world, retained her title of European figure-skating champion.

Australia.—A conference of industrial unions and Labour Party representatives decided to form a new Labour executive in opposition to Mr. Lang, leader of the party, and to seek Federal recognition.

Palestine.—Two Arabs, members of the band which murdered Mr. Starkey, were hanged in Jerusalem.

Germany.—A temporary ban was placed by the Nazis on the anti-Jewish weekly, the *Stürmer*.

Jan. 24 **Bulgaria.**—Dissensions in the Cabinet led to the resignation of the Minister for War, General Lukoff, and the Minister of the Interior, M. Krassnovski.

Soviet Union.—In reply to the Soviet Government's request for consular parity, the British Government closed the branch Consular establishment hitherto attached to the Moscow Embassy.

United Kingdom.—The first of the new Ensign class of air liners made its first trial flight.

The text of the Nationalization of Mines and Mineral Bill was published.

Jan 25 **Italian East Africa.**—The expenditure of large sums on public works was authorized in Rome

Meteorology.—The aurora borealis was visible in western Europe, and as far inland as Switzerland and Austria

Aviation.—Two Italian military bombers made a record flight across the South Atlantic to Brazil

Oslo States.—The Finnish Government refused to join with any other "Oslo" Powers in recognizing Italy's conquest of Abyssinia

Spanish Civil War.—Barcelona was again raided by Nationalists, 150 people being killed In retaliation the Government bombed Salamanca and Seville

Egypt.—The Cabinet approved a reduction of the land tax paid by small landowners.

Jan. 26 **Arctic Research.**—Professor Otto Schmidt (leader of the Soviet North Pole expedition in 1937) was dispatched on a relief expedition to rescue four scientists stranded on an ice-floe

Australia.—The 150th anniversary of the settlement of Australia was celebrated

Austria.—Austrian police raided the office of Dr Leopold Taws, head of the proscribed National Socialist movement.

Spanish Civil War.—Valencia was bombed by Nationalists. The 125 casualties included the captain of the "Dover Castle", at anchor in the port.

Sino-Japanese War.—Nanking and Hangchow were raided by Chinese aircraft.

League of Nations.—The 100th session of the League Council at Geneva was opened under the presidency of M Mustafa Adlé (Iran).

Jan. 27: **France.**—Six Bills outlining a new Labour Charter for France were approved by the Cabinet.

League of Nations.—The release of Hungary from League financial control was decided upon at a secret meeting.

Jan. 28: **Greece.**—The Metaxas regime assumed a fully authoritarian character; about fifteen prominent opposition leaders were banished.

United States.—President Roosevelt asked for increased naval armaments.

United Kingdom.—Local authorities were instructed to hasten air-raid precaution schemes

Austria.—Plans for a Nazi "coup" were discovered at the office of Dr. Taws, head of the Austrian National Socialists.

International Trade.—Mr. Van Zeeland's recommendations for the improvement of international trade were published.

Jan. 29: **Japan.**—The Japanese Finance Ministry decided on a programme of greatly increased taxation.

Australia.—Australia's first pre-marriage clinic was opened in Sydney by the Racial Hygiene Association.

Religious Life.—The 250th anniversary of the birth of Swedenborg was commemorated by Swedenborgians.

Jan. 30: **Switzerland.**—The Swiss canton of Vaux voted in a plebiscite for a Bill suppressing the Communist Party.

Boxing.—Max Schmeling, the German heavy-weight champion, beat Ben Foord, of South Africa, on points over twelve rounds at Hamburg.

Germany.—The fifth anniversary of Herr Hitler's accession to power was celebrated throughout Germany

Austria.—It was announced that Dr. Taws will be charged with high treason.

United Kingdom.—Nine lives were lost in a colliery disaster at Kilsyth.

Italy.—A violent explosion occurred in an arms factory near Segni. Nineteen people were killed, and 200 injured.

Spanish Civil War.—Barcelona was again heavily bombed and over 300 people were killed

Sino-Japanese War.—The Chinese reported capture of Tsining (S Shantung) and isolation of its Japanese garrison.

Jan 31 **Germany.**—General Göring set up a Council of Defence Economy

Albania.—The engagement of H M. King Achmed Zogu to Countess Geraldine Apponyi was announced in Tirana.

The Netherlands.—A daughter was born to H R.H Princess Juliana and Prince Bernhard at Soestdijk Palace.

France.—The Finance Minister affirmed the Government's fidelity to the Tripartite Monetary Agreement.

Spain.—The British s.s. "Endymion" (880 tons) was attacked and sunk by a submarine of unknown nationality off the east coast of Spain. Eleven persons were drowned.

Feb. 1. **United Kingdom.**—Admiral Sir Roger Backhouse, C.-in-C Home Fleet, became First Sea Lord in succession to Admiral-of-the-Fleet Lord Chatfield.

Sir John Simon, Chancellor of the Exchequer, announced a relaxation of the Foreign Loans Embargo.

Spain.—The personnel of the first Nationalist Cabinet, formed at Burgos, was published.

Feb 3 **United Kingdom.**—A central training college for local air-raid precautions officers was announced.

The text of the Government's new Housing (Financial Provisions) Bill was issued, and revealed a decision for further financial State help for slum clearance.

Feb. 4 **Germany.**—Important changes in the German Government, Army Command, and Diplomatic Service were announced by Herr Hitler, who assumed the title of Supreme Commander of the Armed Forces.

Television.—An experimental demonstration of Baird colour television was introduced in the Dominion Theatre Cinema (London).

Spain.—The British ship "Alcira" (1,300 tons) was bombed and sunk off Barcelona by aircraft believed to be Nationalist. There were no casualties.

Feb. 5: **United Kingdom.**—Rugby Football: Scotland beat Wales at Murrayfield by eight points to six.

Japan.—The British and American Governments asked the Japanese Foreign Office for details of its naval construction in relation to the terms of the London Naval Treaty.

Feb. 6: **United Kingdom.**—The centenary of the birth of Sir Henry Irving, leader of the English stage, and its first actor-knight, was celebrated.

Aviation.—Russia's biggest airship, the "V6", crashed and was destroyed with many casualties in Murmansk Province (North Russia).

Feb. 7 **Germany.** The trial of Pastor Niemoller, leader of the Confessional Movement of the Evangelical Church, began in Berlin.

Feb 8 **United Kingdom.**—The King and Queen accepted an invitation to visit Paris in June.

Yugoslavia.—The struggle between the Government and the Serbian Orthodox Church ended with concessions on both sides

Feb. 10: **United Kingdom.**—A new world record speed for land aeroplanes was set up by Squadron-Leader J W. Gillan of the R A F , who covered the distance of 327 miles from Edinburgh to Northolt in 48 minutes, at 408 75 m p h.

League of Nations. A Convention on the status of German refugees was signed at Geneva by Great Britain, France, Holland, Belgium, Denmark, Norway, and Spain, conferring on refugees the rights of sojourn in the territory of the signatories.

Feb 11 **Rumania.**—The Goga Cabinet fell, and a "Cabinet of National Concentration", under the Premiership of Dr Miron Cristea, Patriarch of Rumania, was formed.

France.—A bill granting certain rights to married women was passed by the French Senate and Chamber.

South Africa.—For the first time, the Speech from the Throne was read at the Union Parliament in Afrikaans as well as in English

Feb. 12: **Rugby Football.**—England beat Ireland by 36 points to 14.

Austria.—Dr. von Schuschnigg, the Chancellor, issued a decree increasing the period of compulsory military training from one year to eighteen months

Japan.—The Japanese reply to the Naval Notes presented by Britain, France, and the U.S.A. was handed over.

Rumania.—The new Cabinet of the Patriarch Miron Cristea issued its programme at a meeting over which the King presided.

Feb. 13 **Sino-Japanese War.**—A two-day International Peace Conference ended in London.

Feb. 14: **Northern Ireland.** General election returns showed strong anti-partitionist feeling in Northern Ireland; the Unionists gained two seats.

Singapore.—The Singapore Naval Base was formally inaugurated by Sir Shenton Thomas, Governor of Malaya

The Netherlands.—The "de facto" recognition of Italy's conquest of Abyssinia was announced.

Soviet Union.—The *Pravda* published a statement by M. Stalin on the present position of the Soviet Union.

Feb. 15: **Argentina.**—A new Cabinet was formed, to take office on Feb. 20, under the presidency of Dr. Ortiz.

United Kingdom.—The report and recommendations of the "Oil from Coal" Committee were issued. The new Housing Bill received its second reading in the House of Commons.

Feb. 16: **France.**—A new Treasury Bond issue of Frs. 3,000 millions (£20 millions) was floated.

Italy.—The Government officially denied for an anti-semitic policy.

United Kingdom.—A committee was appointed to consider the claims of spinsters for pensions of 10s. a week at 55.

Austria-Germany.—Details were revealed of the agreement reached by Herr Hitler and Dr von Schuschnigg at Berchtesgaden on Feb 12 There was to be an extension of the Austro-German Agreement of 1936, a reorganization of the Austrian Cabinet, and an amnesty for Austrian Nazis

Feb 17 **Lithuania.**—The twentieth anniversary of the proclamation of independence was celebrated.

Feb 18 **France.**—A compromise amendment to the Bill for conciliation and arbitration in Labour disputes was passed by the Chamber of Deputies

United States.—Tornado and cloudbursts caused heavy casualties

Feb. 19 **Siam.**—The Treaty of Commerce and Navigation (signed between Great Britain and Siam on Nov 23, 1937) was ratified.

Soviet Russia.—Arctic Research—M. Ivan Papanin and his three fellow-scientists, MM. Federov, Shirshov, and Krenkel, were rescued from a drifting ice-floe by the Soviet ice-breakers "Taimyr" and "Murmanetz".

Chile.—A Government temperance campaign resulted in the passing of a bill for the restriction of alcoholic production

France and Japan.—A trade agreement was signed, the first between these two countries since 1911.

United Kingdom.—Mr De Valera arrived in London for the renewal of Anglo-Irish conversations.

Feb. 20: **United Kingdom.**—Mr Eden, Secretary of State for Foreign Affairs, resigned, accompanied by Lord Cranborne, Parliamentary Under-Secretary for Foreign Affairs. The occasion was a difference of opinion between Mr. Eden and Mr Chamberlain on the advisability of immediate Anglo-Italian negotiations.

Switzerland.—A national plebiscite favoured recognition of Romansch as an official language.

British Empire.—The extension to the India route of the new service dispatching all first-class mail by air came into force.

Ice Hockey.—Canada defeated Great Britain by three goals to one, thus winning the world's ice hockey championship. Great Britain, by defeating Czechoslovakia one-nil, retained the European championship.

Germany.—Herr Hitler's Reichstag speech reviewed Germany's internal position after five years of National-Socialist rule, and announced the Reich's foreign policy.

Argentina.—General Don Agustin Justo formally handed over the Presidency of the Republic to Dr. Don Roberto Ortiz.

Feb. 21: **United Kingdom—Italy.**—Italy approved the British formula for non-intervention in Spain, linking the withdrawal of foreign volunteers with the granting of belligerent rights.

Rubber.—An extension of the existing international control scheme for rubber was recommended for a further period of five years.

Rumania.—A new constitution was published. M. Codreanu of his own accord disbanded the All-for-the-Fatherland Party (Iron Guard).

Austria.—All political meetings other than those of the Fatherland Front were banned

Feb. 22 **Yugoslavia.**—The Metropolitan Gavrilo Dozitch, of Cetinje (Montenegro), was appointed Patriarch of the Serbian Orthodox Church.

United Kingdom.—A Labour motion of censure on Mr Chamberlain's policy with regard to the Foreign Secretary's resignation was defeated

Spanish Civil War.—Teruel was recaptured by General Franco

Feb. 23. **Soviet Union.**—The defence commissar, Marshal Voroshiloff, announced that the former naval chiefs, Admiral Orloff and Admiral Sirkoff, had been secretly executed

Palestine.—The new £250,000 port at Tel-Aviv was inaugurated by the High Commissioner.

United Kingdom.—The Labour Party issued a manifesto condemning the foreign policy of the Government and demanding a general election.

Anglo-Irish talks commenced.

Sino-Japanese War.—Seven Chinese aeroplanes bombed Formosa, in the first offensive action to take place on Japanese territory.

Aviation.—The first official test of the "Mayo" composite aircraft was successfully carried out over Rochester at a height of 800 ft. and a speed of 140 m p h.

Feb. 24 **France.**—The Collective Contracts Bill, the second of the six Bills making up M Chautemps' Labour Code, was adopted in the Chamber of Deputies by 442 votes to 108.

Austria.—Dr. von Schuschnigg stressed the independence of Austria in its relations with Germany.

Czechoslovakia.—General Krejci, Chief of the Czechoslovak General Staff, announced the creation and extension of national defence measures.

Estonia.—A new Parliament was elected according to the majority system instead of by proportional representation.

Feb 25: **Spanish Civil War.**—Germany accepted the British formula linking the withdrawal of foreign volunteers from Spain with the granting of belligerent rights.

United Kingdom.—Viscount Halifax, Lord President of the Council, succeeded Mr. Eden as Foreign Secretary.

Feb. 26: **India.**—The British Government agreed to forgo India's naval contributions to Britain provided her government maintained a sea-going fleet of at least six modern escort vessels.

Scotland v. Ireland.—Rugby football, Scotland beat Ireland by 23 points to 14 at Murrayfield.

Austria.—A Press Law designed to prevent the publication of newspaper reports and comments unwelcome to the German Government was issued.

Feb. 27: **Rumania.**—The new Constitution was promulgated by H.M. King Carol.

Philippines.—The High Commissioner, Mr. Paul McNutt, advised against early

freedom for the Philippines, stating that the sentiment for national independence was on the decline.

Feb 28 **Balkan Entente.**—A three-day meeting of the Permanent Council for the Balkan Entente (Greece, Rumania, Turkey, and Yugoslavia) ended at Ankara

Palestine.—Sir John Woodhead, K.C.S.I., was appointed chairman of the Technical Commission to visit Palestine.

Burma.—An estimated surplus of Rs. 3,854,000 was revealed in the first Burmese budget presented since Burma's separation from India

Scotland.—The 300th anniversary of the signing of the National Covenant was celebrated.

March 1 **United Kingdom—Soviet Union.**—The Soviet Government accepted the British formula for non-intervention in Spain.

Austria.—Dr Seyss-Inquart, Minister of the Interior, arrived in Graz, to keep Nazi demonstrations under control.

New Zealand.—Increased import duties, affecting Canadian and Australian goods in particular, came into force.

March 2: **United Kingdom.**—A White Paper gave details of the rearmament programme.

Soviet Union.—Twenty-one prominent Soviet leaders were put on trial.

March 3 · **Germany.**—Dr Niemoller was reported removed to the Sachsenhausen concentration camp by Secret Police

Palestine.—The newly-appointed High Commissioner, Sir Harold MacMichael, arrived in Palestine.

Germany—Soviet Union.—Germany demanded that the Soviet Consulates in the Reich should be liquidated, and announced the closing down of her own consulates in Russia.

France.—A Bill for the creation of a "National Defence Investment Fund" was passed by the Chamber of Deputies.

United States.—Floods at Los Angeles caused heavy casualties.

March 4: **France**—A new Franco-Rumanian trade agreement was signed.

March 5: **France.**—The Bill for the creation of a National Defence Investment Fund was passed by the Senate.

March 6: **Hungary.**—The Prime Minister, M. Daramji, announced a five-year programme for defence, traffic, and agricultural development.

United States.—Canton and Enderbury Islands, in the Phœnix Islands group, were formally annexed by the United States.

Spanish Civil War.—The Nationalist cruiser "Baleares" was sunk off the south-east coast of Spain by a Government destroyer.

'Iraq and Iran.—The Frontier Treaty between 'Iraq and Iran was ratified by the 'Iraqi Chamber Deputies.

March 7: **Australia.**—A new immigration policy was announced by the Prime Minister, Mr. Lyons.

United States.—A trade pact with Czechoslovakia was signed in Washington.

March 8 **United Kingdom.**—The report of the Cadman Committee of Inquiry into Civil Aviation was issued

Poland.—Poland accorded recognition to the Italian East African Empire

Australia.—The centenary of Ballarat (town of "gold-rush" fame, in Victoria) was celebrated.

March 9 **Hungary.**—The Cabinet was reconstructed

United Kingdom.—Viscount Hailsham succeeded Viscount Halifax as Lord President of the Council. Lord Maughan was appointed Lord High Chancellor

Egypt.—A decree-law was passed abolishing organizations of a military character

Austria.—The Chancellor, Dr von Schuschnigg, announced a National Plebiscite on the Government's policy

March 10 · **France.**—The Premier, M Chautemps, resigned in view of the Socialist and Communist refusal to grant him full authority to deal with the finances

United Kingdom.—Mr Hore-Belisha introduced the Army Estimates in the House of Commons, and announced plans for Army reorganization

Rumania.—The rights of Rumanian Jews to citizenship were extensively revised.

Belgium.—The Government signed a contract for loans from Dutch, Swedish, and Swiss banks

March 11: **Austria.**—Berlin sent various demands to the Austrian Government and German troops entered Austria.

Belgium.—The Government accorded recognition to the Italian Empire

United Kingdom.—New Air Ministry appointments were announced.

March 12. **United Kingdom—Austria.**—An Anglo-French protest against German interference in Austria was issued, but rejected by the Reich

Eire.—The Irish delegation to the Anglo-Irish talks in London returned to Dublin.

Rugby Football.—Wales beat Ireland at Swansea by eleven points to five.

March 13 · **Austria.**—The Federal State of Austria was dissolved and declared a part of the German Reich. This was passed as a German Reich law in Berlin.

Italy—Germany.—Herr Hitler received a telegram from Signor Mussolini congratulating him on the way he had "solved the Austrian problem".

France.—M. Léon Blum formed a new Cabinet, with M Paul-Boncour as Foreign Minister.

Soviet Union.—The death sentence was pronounced on all but three of the 21 prominent Soviet leaders accused of treason to the State.

March 14: **United Kingdom.**—Germany's annexation of Austria was discussed in the House of Commons.

Short-wave broadcasting in Spanish and Portuguese to Latin America were officially inaugurated by the B.B.C.

Czechoslovakia.—Both France and Russia gave an assurance of immediate help for Czechoslovakia in the event of aggression in that country. The German Government announced its intention of respecting Czech territorial integrity.

Soviet Union.—The executions of the condemned Soviet plotters were carried out.

Germany—Austria.—Herr Hitler arrived in Vienna.

Palestine.—Mr Ormsby-Gore, Colonial Secretary, announced the revision of immigration quotas for Palestine.

March 15. **Germany—Austria.**—Herr Hitler addressed a mass gathering of Austrian National Socialists. Dr Wolf, "the last Austrian Foreign Minister", was superseded by Herr von Ribbentrop.

Spanish Civil War.—A British steamer, the "Stanwell", was bombed and set on fire in a Nationalist air raid at Tarragona.

March 16 · **Association Football.**—Ireland beat Wales by one goal to nil at Belfast.

Czechoslovakia.—Herr Henlein, leader of the Sudeten Germans, issued a manifesto commending the annexation of Austria and asking all Germans in Czechoslovakia to join his party

Libya.—A reduction of the Italian garrison in Libya was announced.

March 17 · **France.**—M Blum received a vote of confidence in the Chamber of Deputies.

United Kingdom.—The Navy Estimates were passed in the House of Commons by 211 votes to 114.

Belgium.—A Royal Flemish Academy of Science, Letters, and Fine Arts was founded.

March 18 **Germany.**—Herr Hitler announced the dissolution of the present Reichstag and the creation of a "Greater German" Reichstag to include Austrian members.

Poland—Lithuania.—The Polish Government presented an ultimatum to Lithuania with a time-limit of 48 hours.

March 19: **Rugby Football.**—Scotland beat England by 21 points to 16, to win the Calcutta Cup at Twickenham.

United Kingdom.—Two new trade and clearing agreements with Italy were signed

Mexico.—The Government decided to expropriate seventeen British and American oil companies, with a payment of compensation.

March 20: **Poland—Lithuania.**—The Lithuanian Government accepted Poland's ultimatum.

United States.—Mr. Cordell Hull, Secretary of State, announced a "de facto" recognition of the Austro-German "Anschluss".

Hockey.—By beating England by three goals to nil at Belfast, Ireland retained the International Championship.

March 21: **Switzerland.**—M. Baumann, President of the Swiss Confederation, reaffirmed Swiss neutrality and independence.

March 22: **United States.**—President Roosevelt ratified the International Sugar Agreement.

A claim of £442,801 for deaths, injuries, and losses consequent upon the sinking of the "Panay" was submitted to Japan.

Germany.—An official list of persons arrested for political reasons was published in Vienna.

Czechoslovakia.—The German Agrarian Party seceded from the Government Coalition and joined the Sudeten German (Henlein) Party.

March 24 **Lithuania.**—The Cabinet, under Dr Tubelis, resigned following the acceptance of the Polish ultimatum

Czechoslovakia.—The German Clerical Party resigned from the Government Coalition and joined the Henlein Party

Australia.—Mr. Lyons announced increased Government expenditure on defence for the next three years.

France.—The Chamber of Deputies passed a Bill for the organization of the nation in preparation for, and in the event of, war

United States.—Nine European countries were invited to join the United States in taking refugees from Germany

March 25 **Horse Racing.**—The Grand National for 1938 was won by Mrs Marion Scott's "Battleship".

Poland.—Two bills affecting Jews were passed by the Seym.

Czechoslovakia.—Herr Henlein announced that the Sudeten Germans would insist on a General Election for Parliament and for local governing bodies.

Aviation.—King Ghazi of 'Iraq opened the new airport of 'Iraq

March 26 · **Germany.**—The German Navy formally took over the Danube flotilla of Austria

United Kingdom.—Aviation. Flying-officer A. E. Clouston and Mr. Victor Ricketts completed a record-breaking return flight from England to New Zealand.

France.—An inter-departmental conference in Paris voted a credit of £2,660,000 for air-raid precautions.

March 27 · **Mexico.**—President Cardenas of Mexico announced that the United States Treasury would cease buying Mexican silver on April 1.

Germany.—Field-Marshal Göring announced a new economic plan for Austria and for the "aryanization" of business

March 28 **France.**—The *Echo de Paris* was amalgamated with *Le Jour* under the title *Jour-Echo de Paris*.

Bulgaria.—Publication of the final results of Bulgaria's general elections showed a government majority.

Czechoslovakia.—Dr. Hodza introduced a new Minority Statute regulating the position of the German and other minorities within the State.

United States.—The Government Reorganization Bill, which carried on the President's New Deal, was approved by the Senate.

Colonel House died.

March 29 · **Germany.**—Aviation. The Lufthausa flying-boat "DO 18" won the world distance record for Germany by flying from England to Brazil in 43 hours 15 minutes.

March 30: **Italy.**—Signor Mussolini reviewed the development of the Italian armed forces, and conferred a new title —"Marshal of the Empire"—upon H.M. King Victor Emmanuel III and himself.

Poland.—The deprivation of citizenship Bill for Polish subjects resident abroad became law.

Rumania.—The Cabinet of Dr. Miron Cristea, the Patriarch of Rumania, resigned. He himself formed a new Cabinet. A permanent Crown Council was also created.

March 31 · **Liechtenstein.**—Prince Francis-Joseph was installed as Regent of Liechtenstein Prince Francis I retired to Prague

Norway.—A Government Bill for an extended defence loan was passed

United Kingdom.—A summary of the coal-mining industry in 1937 was published by the Mines Department

Egypt.—A General Election was held in Upper Egypt

Spanish Civil War.—The non-intervention sub-committee met in London under Lord Plymouth.

April 1 **Britain—United States.**—The decision of Britain and the U S A to build ships in excess of the restrictions of the London Naval Treaty was announced

United States.—Dr. Harlow Shapley, director of the Harvard Observatory, discovered a new star cluster in the southern sky.

Southern Rhodesia.—A new scheme to obtain immigrants from Great Britain was formulated

Rumania.—Sir Reginald Hoare, British Minister in Bucharest, inaugurated the first English broadcast

Czechoslovakia.—The Sudeten-German Party opposed Dr Hodža's minority statute

April 2: **Germany.**—Dr von Dircksen was appointed ambassador in London in succession to Herr von Ribbentrop

United Kingdom.—Great Britain recognized the *Anschluss*

Oxford won the 90th university boat race, beating Cambridge by 2 lengths.

Australia.—The Queensland elections were held.

Czechoslovakia.—Recognition was accorded to the *Anschluss*.

April 3: **Norway.**—A Bill was passed to prolong the Storthing's electoral period from three to four years.

United States.—The Agricultural Adjustment Administration published its payments to farmers for co-operation in the 1936 soil-conservation programme.

New Zealand.—The Government proposed a National Health Insurance scheme.

China.—Dictatorial powers were given to General Chiang Kai-shek.

April 4: **Soviet Union.**—Japan issued a protest against alleged Soviet military aid to China

Germany.—A new internal loan was floated.

Italian East Africa.—Greece and Turkey recognized the Italian Empire.

April 5: **United Kingdom.**—The Admiralty placed an order for nine more motor torpedo boats.

Mr. Montague Norman was re-elected Governor of the Bank of England.

United States.—A memorandum signed by President Roosevelt and President Queza postponed the economic independence of the Philippines until 1960

Spanish Civil War.—A new Spanish Republican Cabinet was formed with Dr. Juan Negrín at its head.

April 6: **United States.**—The government recognized the *Anschluss*, and declared Germany responsible for Austria's debt to the U.S.A.

United Kingdom.—Twelve doctors were appointed to assist the National Fitness Council.

April 7 **United States.**—The government cancelled the preferential tariffs which had formerly applied to Austria.

United Kingdom.—Boxing. Len Harvey regained the British light-heavyweight title, beating Jock McAvoy on points over 15 rounds at Harringay

United States — United Kingdom. The setting up of an international committee to deal with emigration from Germany and Austria was proposed by the U S A. and agreed to by Britain.

April 8 **France.**—M Blum's Cabinet resigned

The most powerful television transmitter in the world was opened at the Eiffel Tower, Paris

Czechoslovakia.—Dr Czech resigned from the Cabinet. He was temporarily replaced by Dr. Derer

United Kingdom—The British Government protested against Mexican appropriation of British oil companies.

April 9: **Australia.**—The Queensland elections showed a large Labour majority.

Association Football.—Scotland beat England 1—0 England, however, won the international championship.

April 10: **France.**—M. Daladier formed a new cabinet.

Germany.—A plebiscite on the *Anschluss* held throughout Germany and Austria resulted in a 99 per cent vote for Austro-German Union.

April 11: **Egypt.**—The results of the general elections were published.

Canada and the United States.—A "United League of Nations of North American Indians" was formed

Bank for International Settlements.—The 82nd board meeting took place at Basle

April 12 **Egypt.**—King Farouk opened the new parliament.

United Kingdom.—The British Empire Cancer Campaign held a meeting at the Mansion House.

April 13: **France.**—M. Daladier received special powers to carry through financial measures by decree.

United Kingdom.—The Labour Party rejected proposals for a Popular Front.

Danzig.—Professor Burckhardt, High Commissioner of the League of Nations, arrived on an official visit.

April 14: **United States.**—The Navy Department asked for increased expenditure in the Naval Appropriations Bill.

France—Italy.—A Franco-Italian Trade and Clearing Agreement was signed.

April 16: **United Kingdom—Italy.**—An Anglo-Italian Agreement was signed

Czechoslovakia.—A wide amnesty for political prisoners was signed by President Beneš.

Australia.—A new internal loan was approved.

April 17: **Oslo Convention.**—The second session of the Oslo Group conference ended at Brussels.

Rumania.—M. Codreanean, leader of the "All-for-the-Fatherland" party, was arrested in connexion with an alleged plot for a *coup d'état*.

France.—The Paris metal-workers' strike ended, with an agreement to resume work on April 19.

April 18 **Rumania.**—Prince Nicholas denied having any connexion with the "Iron Guard".

South-West Africa.—A Gazette extraordinary proscribed certain "political organizations" in the country

April 19 **Spanish Civil War.**—In accordance with the terms of the Non-Intervention agreement, British, French, German, and Italian warships took over control of the Spanish coasts

France—Italy.—Franco-Italian conversations began in Rome

United States.—The Senate approved the increased expenditure requested by the Navy Department

April 20 **Czechoslovakia.**—Recognition of the Italian Empire was announced

United Kingdom.—An Air Ministry mission left for Canada and the United States to arrange purchases of aircraft

April 21 · **Spanish Civil War.**—The Non-Intervention Council was registered as a public company.

Germany.—The suppression of the "Bnai B'ith" lodges was ordered

United Kingdom.—The National Council of the Socialist League voted for the immediate dissolution of the League.

Scandinavia.—A meeting of the Foreign Ministers of Denmark, Finland, Norway, and Sweden began at Helsingfors. Co-operation was agreed upon.

April 22: **Poland.**—Jews were barred from membership of the National Totalitarian Party.

South-West Africa.—An official announcement stated that German students from South-West Africa were to be trained in a Nazi community in Germany, in order to propagate its teaching on return to Africa.

United Kingdom.—The government decided to renew the film quota for a further ten years and to abolish "quickies".

Australia.—Federal and State authorities, conferring upon the census figures, recommended the absorption of half-castes by the whites as the sole solution of the half-caste problem.

April 23: **United Kingdom.**—King George VI unveiled Windsor's memorial to George V.

Luxemburg.—The Communist Party was dissolved by the government

Italy.—The Anglo-Italian Trade Agreement was ratified.

April 24: **Belgium.**—Belgium was released from her obligations to Great Britain and France under the Locarno Treaty.

Estonia.—Mr. Konstantin Päts was re-elected President.

April 25: **Eire.**—An Anglo-Eire Pact was signed in London.

France.—M. Daladier's financial programme received cabinet approval.

April 26: **United Kingdom.**—The first issue of a National Defence Loan was made. Sir John Simon introduced his first Budget.

United States.—The United States Supreme Court invalidated a Georgian law, of 66 years standing, prohibiting insurrection against the State.

Motor Racing.—Captain G. E. T. Eyston broke his own and the world's record for one hour's driving, at 105·597 m p.h.

April 27 **United Kingdom.**—The British government reached an agreement with the Polish government similar to the bilateral agreements with Germany and the Soviet Union, in the London Naval Treaty.

In the House of Commons, Mr A P Herbert's Betting and Bookmakers' Bill was introduced

Albania.—The marriage of King Zog to Countess Geraldine Apponyi of Hungary took place at Tirana

Egypt.—Mohamed Mahmoud Pasha formed a new cabinet

April 28 **London Naval Treaty.**—A British Note to Geneva informed the League that in view of Japanese action, H.M Government would depart from the restrictions of the London Naval Treaty in respect of the upper limits of tonnage and guns of capital ships.

United Kingdom.—The Report of the Amulree Committee on Holidays with Pay was published. First report of the Food (Defence Plans) Department issued

Far-reaching plans of Post Office reorganization were announced by the Postmaster-General

April 29: **United Kingdom—France.**—The French Premier and Foreign Minister (MM Daladier and Bonnet) arrived in London for conversations with Mr. Chamberlain and Lord Halifax

Eire.—The Anglo-Irish Agreement was ratified without a division.

France.—A joint meeting of the *Église Reformée Evangélique*, the *Église Reformée*, and the *Église Evangélique Libré* was held to inquire into the possibilities of fusion.

April 30 **United States.**—Mr. Philip La Follette, Governor of Wisconsin, formed the New National Progressive Party.

Italian East Africa.—Eire formally recognized Italian Sovereignty over Abyssinia.

Association Football.—Preston North End won the F A. Cup, beating Huddersfield Town at Wembley by 1–0.

May 1 · **United Kingdom.**—Government authority was given for further Royal Air Force expansion.

Spain.—Republican Spain celebrated May Day by publication of a manifesto of the aims of the government.

May 2: **United Kingdom.**—A government motion approved the results of the Anglo-Italian conversations.

Colombia.—Señor Don Eduardo Santos, candidate of the Liberal Party, was elected President of the Republic.

Lithuania.—Recognition was accorded to Italian East Africa.

Italy.—The government notified the Turkish government of its adherence to the Montreux Convention, "accompanied by the reserves determined by Italy's withdrawal from the League".

Germany.—Herr Hitler left Berlin for an official visit to Italy.

May 3: **British Empire.**—The British Empire Exhibition was opened by H.M. the King at Bellahouston Park, Glasgow.

France.—The first of a series of decree laws, aiming to bring about economic and financial recovery in France, came into force.

Portugal.—An increased naval programme was decreed by the government.

May 4 **France.**—The *de facto* stabilization of the franc at a lower level was announced by M Daladier in a broadcast address

Eire.—Dr Douglas Hyde was elected President

Australia.—The Australian government announced a new £7 million London loan, part of its proceeds to finance purchase in the United Kingdom of materials for the Australian defence programme.

May 5 · **United Kingdom.**—Second reading of the Eire (Confirmation of Agreements) Bill

South Africa.—Publication by the South African Treasury of figures showed the Union's revenue for 1937

May 6 **Czechoslovakia.**—The government announced that it would take steps to liquidate Communist activity on the Polish-Czechoslovak frontier

Italy.—A decree-law was published making pre-military training compulsory for all Italian males from the age of eight to twenty-one

China.—A Chinese note to Great Britain defined China's attitude towards the Anglo-Japanese agreement relating to the maritime customs

May 7 **Iraq.**—A five-year plan, mainly of public works was approved by the Iraqi Chamber of Deputies.

Germany.—The government increased its internal loan for consolidating short-term debts.

May 8 **Estonia.**—A new cabinet was formed with M. Karl Eenpalu as prime minister.

May 9 · **United Kingdom.**—The administration of Justice (Miscellaneous Provisions) Bill was read for the second time

May 10 · **United Kingdom.**—A disastrous explosion occurred at the Markham Colliery. The death-roll was 79.

May 11: **United States.**—A protest was lodged in Berlin against the application to American citizens of the decree requiring Jews resident in Germany to register properties worth more than 5,000 marks.

Czechoslovakia.—The Polish minority demanded autonomy.

Brazil.—A revolt of the banned integralist (Fascist) Party broke out, but was put down.

Estonia.—The Italian East African Empire was recognized.

May 12: **United Kingdom.**—A debate on the Air Ministry estimates took place in the House of Commons.

A Bill to amend the Herring Industry Act, 1935, was introduced.

Manchukuo.—The recognition of Manchukuo by Germany was established by the signature of a treaty

France.—The Bank of France reduced the bank rate from three per cent to 2½ per cent.

United States.—In a statement on foreign policy Mr. Cordell Hull announced that the U.S. would not lift the arms embargo on Republican Spain, and further, that it would not recognize the Italian conquest of Ethiopia.

May 13: **Czechoslovakia.**—The Czech government announced its willingness to enter into negotiations with the Sudeten Germans and other interested

parties over the proposed National Minorities Statute

United Kingdom.—A loan of £10 millions was issued by the London County Council for housing and slum clearance

Hungary.—Dr. Béla de Imrédy formed a new cabinet

May 14 **United Kingdom.**—Mr A P Herbert's Betting and Bookmakers Bill was "counted out" in the House of Commons

League of Nations.—Chile withdrew from the League

May 15 · **Belgium.**—M Spaak formed a new cabinet

Italian East Africa.—Norwegian recognition of the Italian East African Empire was announced.

May 16 : **Canada.**—Sir Gerald Campbell was appointed British High Commissioner in Canada in succession to Sir Francis Floud

United Kingdom.—A reorganization of the cabinet was announced

The Bressey Report on London highway development was published.

May 17 **United Kingdom.**—The Eire (Confirmation of Agreements) Act received the Royal Assent

Northern Ireland.—Mr J N Andrews, Minister of Finance, presented his budget statement.

May 18 **United Kingdom.**—Sir Kingsley Wood made his first speech as Secretary for Air when he moved the second reading of the Air Navigation Bill

May 19 **International Federation of Trade Unions.**—The General Council of the I F.T.U., which met at Oslo, decided that the Soviet Unions should not be admitted to the I F T U.

Belgium.—M. Spaak, the new Premier of Belgium, obtained a vote of confidence in the Belgian Chamber.

Eire.—The Anglo-Irish "Economic War", after lasting nearly six years, officially came to an end.

May 20 : **United States.**—President Roosevelt recommended the creation of a Joint Committee to study the phosphate resources of the country.

Mexico.—General Cedillo and his supporters revolted against President Cardenas and the government.

United Kingdom.—At the Liberal Party organization, held at Bath, a resolution was passed approving of Liberal co-operation with other parties and groups

Czechoslovakia. — Reservists were called up in consequence of alarm caused by German Army manœuvres on the frontier.

May 21 · **Germany.**—It was announced that British subjects wishing to proceed to Germany would in future require a visa.

South Africa.—The final results of the S. African general elections were published, showing a decided victory for the United (government) Party, led by Gen. Hertzog and Gen. Smuts.

May 22 : **United Kingdom.**—An emergency meeting of the Cabinet was called on the Czech crisis.

Lord Nuffield placed his services at the disposal of the Air Ministry.

May 23 : **United Kingdom.**—Indo-British cotton negotiations were broken off.

Czechoslovakia.—Negotiations were held in Prague between Dr. Hodža and Herr Henlein.

May 24 **France.**—A second series of financial and economic decrees was approved by the Council of Ministers.

Methodism.—The Methodist Church throughout the world celebrated the bicentenary of the conversion of John Wesley.

Germany.—It was announced that, for administrative purposes, the territorial units forming the former State of Austria would be revised

May 25 **United Kingdom.**—A Labour motion for an independent inquiry into the state of air defences was rejected

Canada.—During a statement on foreign policy, Mr. Mackenzie King announced Canada's complete liberty of action in the event of a war involving Great Britain.

Eucharistic Congress.—The thirty-fourth World Eucharistic Congress was opened in Budapest. Cardinal Pacelli, the Papal Legate, was present, assisted by 15 cardinals.

Rumania.—General Codreanu was sentenced to 10 years' imprisonment.

May 26 . **Japan.** Prince Konoye reconstructed the Cabinet, placing more power in the hands of the army.

League of Nations.—Guatemala's withdrawal became effective.

Spain.—The Chairman's Sub-Committee of the Non-Intervention Committee adopted the British plan for the withdrawal of foreign volunteers from Spain.

May 27 : **Belgium.**—The Bill instituting a national crisis tax was passed by the Belgian Chamber of Deputies.

Canada.—Mr. Mackenzie King announced that the government would shortly become sole shareholder of the Bank of Canada.

United Kingdom.—An Anglo-Turkish economic agreement was signed.

Japan.—In a Cabinet reconstruction Mr. Hirsta, Foreign Minister, was succeeded by Gen. Ugaki.

May 28 : **Bolivia.**—A new cabinet was constituted.

Eire.—Discussions were concluded in London between officials of the United Kingdom and Eire, arranging for the transfer of defences for Cork Harbour to the government of Eire.

May 29 : **Switzerland.**—The Swiss Federal Council issued a decree whereby the government, customs, and postal authorities are entitled to seize all material likely to act as subversive propaganda.

Sino-Japanese War.—Canton suffered a third day of heavy bombardment.

May 30 : **Poland.**—A delegation of officers of the Rumanian General Staff arrived in Warsaw for conversations.

United Kingdom.—Sir Maurice Hankey was appointed a director of the Suez Canal, and resigned from all other government appointments.

Dr. H. J. Gough was appointed to the new post of Director of Scientific Research at the War Office.

Japan.—The Japanese police lifted the Press ban on the mass-arrests of Communists which had taken place between December 1936 and October 1937.

May 31 : **China.**—The Chinese government signed a contract with the Banque Franco-Chinoise, the Banque de Paris, the Banque d'Indo-Chine, and Lazard Frères, for the completion of a railway from Hanoi (French Indo-China) to Nanning, capital of the South China Province of Kwangsi.

Bulgaria.—Bulgaria recognized the Italian East African Empire

June 1 **United Kingdom.**—A special committee to study the problems of mental health was appointed by the British Medical Association, with Sir Robert Johnstone as President.

Horse Racing.—The Derby, run at Epsom, was won by the French colt "Bois Roussell"

June 2 **Italian East Africa.**—Sweden and Finland recognized Italy's conquest of Abyssinia.

Germany.—A law was passed authorizing the confiscation of works of "degenerate art" from public galleries and museums without compensation to the owners

United Kingdom.—Expansion of the Auxiliary Air Force and improvement in its conditions of service were announced

League of Nations.—Chile gave notice of withdrawal.

International Labour Conference.—The 1938 session of the I L P. met at Geneva under the presidency of Professor Falcão, Brazilian Minister of Labour.

June 3 : **United States.**—Mr. Cordell Hull outlined a four-point programme for American co-operation in the restoration of international peace.

New Zealand.—The Minister of Labour, Mr. Armstrong, announced a scheme of country camps for unemployed men.

Alexandretta.—The French High Commissioner of Syria imposed martial law throughout the Sanjak.

United Kingdom.—The government issued protests in Burgos and Tokyo against air raids on civilian areas in Spain and China.

June 4 : **International Labour Office.**—Mr. John G. Winant succeeded Mr. Harold Butler as Director-General.

Mexico.—The Mexican government claimed that the revolt of General Cedillo had been a complete failure.

Golf.—Great Britain won the Walker Cup for the first time since the inception of the contest in 1922.

Aviation.—At Dessau, a four-engined Junkers' plane piloted by Capt. Kindermann beat the altitude record.

Alexandretta.—M. Bonnet (French Foreign Minister) had conversations with the Turkish Ambassador in Paris.

June 5 : **India.**—The Executive Council of the All-India Moslem League met at Bombay under the presidency of Mr. Jinnah. It claimed that the League is the only organization which can speak for Moslems, and that the Congress Party now represented only Hindus.

June 6 : **India.**—The government of India issued a communiqué declaring that the rupee was to be maintained at its present value (1*s.* 6*d.*).

Aviation.—Major-General Udet, the famous German air "ace" established a new speed record at Rostock (Mecklenberg).

Alexandretta.—There were strikes and demonstrations in the principal Syrian towns.

June 7 : **Spain.**—32 persons were killed in an air raid on Alicante.

June 8 · **Sweden.**—A Bill enforcing a legal paid holiday for employees was passed by the Riksdag

Argentina.—A bill proposing nationalization of all railways was submitted to Congress

June 9 · **France.**—M. Charles Maurras was elected a member of the French Academy

June 10 **United Kingdom.**—The government announced a decision to purchase 400 aircraft in the U S A

Uruguay.—A new cabinet was formed.

British Empire.—The first annual report on Colonial development was published.

Italy.—It was stated that the island of Leros (Dodecanese) was to be converted into a naval and air fortress of the first rank.

June 11 : **United States.** The government announced its intention to discourage aircraft sales to nations which practised bombing of civil populations.

June 12 · **Czechoslovakia.**—Municipal elections ended with gains for the Henlein party

June 13 : **Lawn Tennis.**—The United States beat Great Britain in the Wightman Cup contest at Wimbledon

Suez Canal.—The Suez Canal Company, meeting in Paris, proposed a dividend of 820 frs. as compared with 600 frs. last year.

India.—The Reorganization Committee of the Chamber of Princes, which had met in Bombay under the presidency of H H the Maharaja of Bikaner to discuss the attitude of the Indian States towards Federation, concluded its sessions.

June 14 : **United Kingdom.**—A new medium-term three per cent National Defence loan of £80 millions was floated

Mr. Malcolm MacDonald announced the appointment of a Royal Commission to inquire into social and economic conditions in the West Indies.

The first Test Match between England and Australia ended at Nottingham in a draw.

Sir John Reith was appointed chairman of Imperial Airways.

International Steel Cartel.—At a meeting in Paris the Joint Co-ordinating Committee of the Steel Cartel decided to extend the cartel, and to stabilize existing prices.

June 16 **France.**—The Chamber of Deputies ratified the Convention of Montreux, which puts an end to the capitulations in Egypt.

Germany.—The Reich disclaimed responsibility for Austria's foreign debts

United Kingdom.—A new A R P. organization was formed : the Women's Voluntary Services.

June 17 · **United States.**—A second demand to Germany to assume responsibility for the Austrian debts was made

Horse Racing.—The Ascot Gold Cup was won by "Flares", an American horse owned by Mr. W. Woodward.

United Kingdom.—The fourteenth International Wool Conference, held in London under the presidency of M. Maurice Dubrille (France), concluded.

Eire.—Polling for the general election took place.

France.—The prorogation of parliament for an unspecified period was proposed by M. Daladier and passed in the Chamber of Deputies.

June 20 **Australia.**—The House of Representatives passed the National Insurance Bill by 33 votes to 28

United Kingdom.—An International Red Cross Conference, attended by over 600 delegates opened in London

June 21 · **United Kingdom.**—Oil-from-coal plans, capable of giving work to 11,500 people in the distressed areas were outlined in a Labour Party programme

Eire.—The general election resulted in a victory for Mr. de Valera and Fianna Fáil

Spain.—The Non-Intervention Sub-Committee gave its final and unanimous approval of the British scheme for the withdrawal of foreign combatants.

United States.—A Federal Grand Jury, sitting in New York, indicted sixteen men and two women for an alleged German espionage plot

June 22 **New Guinea.**—Salamana became the new capital of the Australian Mandated Territory of New Guinea in place of Rabaul, which was destroyed by volcanic eruptions in 1937

Germany.—A decree instituting compulsory labour service for all men and women of German nationality was issued by Field Marshal Goring.

International Labour Conference.—The 1938 session of the Conference was concluded

June 23 **France.**—M André Maurois was elected to the French Academy

Boxing.—Joe Louis retained his title of heavyweight champion of the world by beating Max Schmeling

United Kingdom.—It was announced that the Royal visit to Paris would be postponed until July 19–22 at the suggestion of M Lebrun.

June 24 : **Egypt.**—A reconstruction of the cabinet was announced.

Mountaineering.—Four German climbers, Herren Ludwig Voerg, Andreas Heckmeier, Heinrich Harrar, and Fritz Kasparek, who started on July 21–22 to climb the North Wall of the Eiger (13,038 feet), reached its summit, a feat never before achieved

June 25 **United Kingdom.**—A joint committee of members of the British Medical Association and the Trades Union Congress submitted a plan for a national maternity service to the Government

Sir Kingsley Wood opened Manchester's new airport at Ringway.

June 26 : **Mexico.**—The government suspended the issue of compensation payments to foreign oil companies for expropriated oil fields.

United Kingdom.—A flying-boat service to Australia was inaugurated

June 27 : **United States.**—The Works Progress Administration raised the wages of 500,000 unskilled W P.A. workers in thirteen southern states in accordance with the Fair Labour Standards Act.

Australia.—At a conference of prominent union leaders, a new State Labour Party was created.

June 28 . **France.**—A decree modifying the 40-hour week for shops was issued.

United Kingdom.—A review of the present position of anti-aircraft defence was given by the Secretary for War in the House of Commons.

Aviation.—Two Soviet airmen, Kokkinaki and Briandinsky successfully completed a 4,375-mile non-stop flight from Moscow to Vladivostock in 24 hours

Jamaica.—It was announced in the Jamaican Legislative Assembly that taxation would be increased to meet the cost of higher wages

Nigeria.—Approval was given by Order in Council for the colony to maintain its own warships

June 29 · **Cricket.**—The second test match between England and Australia ended at Lord's in a draw.

France.—The last series of decrees issued under the Act granting extraordinary powers to the government were officially promulgated

Mountaineering.—The Tilman Expedition abandoned its attempt to climb Everest.

June 30 . **London Naval Treaty.**—Mr. Duff Cooper, First Lord of the Admiralty, informed the House of Commons of international agreements providing for bigger capital ships

Australia.—The National Insurance Bill was passed

July 1 · **Eire.**—Mr. De Valera was re-elected Prime Minister of Eire

United Kingdom.—As a result of Anglo-German negotiations in London, Germany assumed responsibility for Austrian State Loan Payments

Australia.—A new wool trade agreement was made with Japan

Sino-Japanese War.—Japanese planes bombed Swatow ; there were 1,000 civilian casualties

July 2 : **United Kingdom.**—At Wimbledon, the men's singles championship was won by D. Budge (U.S A), the ladies' by Miss Helen Wills-Moody (U S.A)

The King's Cup Air Race was won by Mr. Alexander Henshaw in a Percival Mew Gull machine at an average speed of 236½ m.p h

Soviet Union.—A new internal loan, to promote economic and cultural needs was issued.

July 3 : **Switzerland.**—A new Federal penal code (including abolition of the death penalty) was approved by a national plebiscite.

Alexandretta.—A Franco-Turkish Military Convention for the mutual defence of the Sanjak was signed at Antioch

United Kingdom.—A new British speed record was set up by the L N.E R. locomotive "Mullard".

July 4 · **Soviet Union.**—M. Kalinin, President of the Supreme Council of the U S S R., announced that the fleets of the Pacific and the Soviet North had been added to the Russian Navy

Spanish Civil War.—In reply to a British protest against the bombing of ships, General Franco suggested that one port should be free from attack.

July 5 : **Spanish Civil War.**—The Non-Intervention Committee, meeting in London, agreed to the British plan for the withdrawal of foreign volunteers from Spain.

Italy.—A barter agreement with Japan and Manchukuo was signed.

Sino-Japanese War.—Hukow, a strategic town on the south bank of the Yangtse, was occupied by the Japanese.

July 6 : **United Kingdom.**—A resolution to make an annual contribution to the

costs of Imperial Defence was passed by the Tynwald—the Manx Parliament

Czechoslovakia.—The tenth "Sokol" Festival, held in Prague, ended

United Kingdom.—The Anglo-Soviet agreement on an increased tonnage of maximum ships was modified.

United States.—The international conference to consider the refugee problem, opened at Evian under the presidency of M Béranger

United Kingdom—Australia.—The first flight of the new mail and passenger flying-boat service was successfully accomplished.

July 7 · **New Zealand.**—The Federation of Labour decided to affiliate with the International Federation of Trade Unions.

July 8 · **United Kingdom.**—Four R.A.F. machines completed the "longest non-stop journey ever accomplished by an organized military unit", when they flew 4,300 miles to the Near East

The British Open Golf Championship was won by Reginald Whitcombe at the Royal St. George's course, Sandwich.

Spanish Civil War.—Nationalists made an advance towards Sagunto.

July 9: **Bolivia and Paraguay.**—The "Chaco conflict" ended when both countries initialled the Chaco Peace Pact at Buenos Aires

Mountaineering.—Mr. G. H. Bullock, British Minister Resident in Ecuador, and Mr André Rosevelt, American explorer, reached the summit of Mount Cotopaxi, the highest active volcano in the world (19,613 ft).

July 10 **France.**—The newly restored Cathedral of Reims was officially re-opened by Cardinal Suhard.

United Kingdom.—A new world record for two-seater gliders was made by Flight-Lieutenant W. B. Murray and Mr T. S Sproule at Dunstable Downs

Germany.—A system of loans and grants for Germany's agricultural population was put into operation

July 11. **Eire.**—Spike Island in Cork Harbour, with adjoining fortifications, was formally handed over by the British garrison to Irish troops

United Kingdom.—A Conference of the International Council of Women opened at Edinburgh Delegates from 31 countries attended.

July 12. **Turkey.**—An agreement between Turkey and Yugoslavia providing for the repatriation of Turkish nationals from Yugoslav Macedonia, was signed at Istanbul

League of Nations.—Venezuela withdrew from the League

Sino-Japanese War.—Wuchang was heavily bombed by Japanese planes

July 13 · **United Kingdom.**—A second special mission was sent to Canada to negotiate for the purchase of heavy bomber aircraft.

United Kingdom—Germany. — The Anglo-German Naval Agreement was modified.

July 14: **Sino-Japanese War.**—Ninety-six people were killed during a raid on Canton.

United Kingdom.—Revised estimates for Eire services were issued as a result of the Anglo-Irish Agreement.

United States.—Mr Howard Hughes and four companions completed a record round-the-world flight

July 15 · **Japan.**—The Japanese Government withdrew its invitation to hold the 1940 Olympic Games in Tokyo.

July 16 · **United Kingdom.**—The annual conference of the British Medical Association opened at Plymouth.

July 18 **United States.**—Mr Douglas Corrigan landed at Baldonnel Aerodrome near Dublin, having flown across the Atlantic from New York.

France.—A Convention was signed in Paris by which British Capitulations in French Morocco ended A new Anglo-French Commercial Treaty was also signed

Sino-Japanese War.—Intensive raids were made on the Canton—Hankow railway and towns by the Japanese

July 19 **United Kingdom.**—Mr F. W. Ogilvie succeeded Sir John Reith as Director-General of the B B C.

Finland.—The Finnish Olympic Committee accepted an invitation to hold the 1940 Olympic Games in Finland

Czechoslovakia.—The Sudeten-German (Henlein) Party published the text of the memorandum which had been accepted as a basis for negotiations for proposed minority measures

France.—Their Majesties the King and Queen arrived in France for their four-day State visit.

Spanish Civil War.—Barcelona Cathedral was bombed and the interior destroyed.

The British steamer "Stanland" was bombed at Valencia.

July 20 · **Italy—Hungary.**—An official communiqué of the Italo-Hungarian talks held in Rome, was issued.

United Kingdom and Australia.—Details of a new trade understanding between the two countries were published in a "Memorandum of Conclusions".

July 21: **Bolivia and Paraguay.**—The Chaco Peace Treaty was signed.

Italian East Africa.—Portugal recognized the Italian East African Empire.

United Kingdom.—The "pick-a-back" plane "Mercury", which forms the upper part of the Mayo composite aircraft, completed a record Atlantic flight.

France.—The King and President Lebrun reviewed a parade of 50,000 French troops at Versailles.

Australia.—The New South Wales Trade Unions declined an invitation to be represented in the Australian Defence Panel Scheme

Soviet Union—Japan.—Occupation by Russian troops of a hill claimed to be inside Manchukuo caused Soviet-Japanese tension.

July 22: **France.**—The Australian War Memorial at Villers-Bretonneux was unveiled by H.M the King

Mexico.—The U.S. Government protested against the confiscation by the Mexican Government of American-owned agrarian properties in Mexico.

July 23 · **United Kingdom.**—A new reserve for the Air Force, to be known as the Civil Air Guard, was created.

Peace Movement.—A conference convened by the International Peace Campaign met in Paris.

July 24: **Czechoslovakia.**—The British Government sent Lord Runciman to Prague as impartial "standing adviser" on the Sudeten-German question.

Japan.—Japan announced her readiness to negotiate for a settlement of the Japanese-Soviet frontier disputes

Spanish Civil War.—The 7,000-ton Norwegian steamer "Tirranna" was bombed near Tangier.

July 25 **United States.**—After conversations in Paris, France and America decided to maintain the Anglo-Franco-American tripartite monetary agreement.

Northern Ireland.—Major-Gen. Sir James Cooke-Collis was appointed Ulster Agent in London.

United Kingdom.—Australia beat England in the fourth Test Match at Leeds by five wickets.

Australia.—The Victorian Trade Unions followed the example of the N.S.W. and other State unions in rejecting co-operation with the government in defence preparations.

July 26 · **Spanish Civil War.**—The Republican government accepted the British plan for the withdrawal of foreign volunteers for Spain.

Sino-Japanese War.—The Chinese port of Kiukiang fell to the Japanese.

July 27 **United Kingdom.**—Sir Samuel Hoare announced plans for a reformed prison system.

The "Mercury", upper component of the Mayo composite aircraft, landed at Southampton after her round flight between England and New York.

Mexico.—The Mexican Supreme Court rejected the appeal of expropriated foreign oil companies.

New Zealand.—Sir Harry Batterbee was appointed High Commissioner.

July 28 **United Kingdom.**—Mr. Hore-Belisha announced reformed service conditions for combatant Army officers.

The Cunard-White Star liner "Mauretania" was launched at Birkenhead.

British West Indies.—The personnel of the Royal Commission set up to inquire into conditions in the West Indian Colonies was published.

July 29: **United Kingdom.**—Southampton was named as the first Empire air base.

A new Maltese Constitution was set up

Improved conditions of service and rates of pay in the Royal Navy and the R.A.F. were published.

Greece.—An attempted uprising was suppressed within a few hours.

Iraq.—New oil concessions were granted by the Government to the Basrah Petroleum Company, Ltd.

July 30: **United Kingdom.**—The House adjourned until Nov. 1.

July 31: **United Kingdom.**—A new British gliding record was set up by Mr. H. O. Pick, who remained in the air for 13 hours 27 minutes.

Bulgaria.—A non-aggression agreement between Bulgaria and the "Balkan Entente" States was signed.

Aug. 2: **France—Germany.**—A supplementary agreement to the Franco-German trade agreement of July 10, 1937, was signed in Berlin.

Aug 3 · **Jewish Problems.**—The first meeting of the Inter-Governmental Refugees Committee set up at the Evian Conference was held in London at the Foreign Office under the presidency of Lord Winterton

Mexico.—President Cárdenas, in reply to Washington's demand that Mexico should pay for expropriated agrarian properties belonging to U S nationals, admitted Mexico's obligation, but claimed the right to choose the time and manner of payment

Czechoslovakia.—Lord Runciman arrived in Prague as independent mediator and observer in the Sudeten-German dispute

Germany.—A new inheritance law was promulgated

United Kingdom.—The National Union of Welsh Societies asked for removal of the Welsh language ban in the Courts.

Aug 4 **Rumania.**—The Government published a new Nationalities Statute

United Kingdom—Egypt.—An agreement was initialled in London whereby Great Britain agreed to bear half the cost of accommodation of British forces in the Suez Canal Zone.

Aug. 5 **United Kingdom—Palestine.**—Mr. Malcolm MacDonald arrived in Palestine to confer with the High Commissioner on the recent and worst wave of terrorism which Palestine had suffered

Italy.—An official declaration on Fascist national policy included a statement that Jewish activity would be limited proportionately to numbers.

Germany.—Captain Walter Dreschel broke the world height record for gliders, ascending in a Minimon machine to 23,190 ft.

Aug. 6 · **France—Bulgaria.**—A contract was signed whereby French bankers granted a loan to Bulgaria to be used for purchases in France.

Great Britain—South Africa.—The British Rugby Union touring team were beaten in the first of three test matches against South Africa by twenty-six points to twelve at Johannesburg.

Aug. 7 : **Northern Rhodesia.**—The Government rejected a scheme for Jewish immigration chiefly on grounds of economic impracticability.

Germany.—The third German Nanga Parbat Expedition was abandoned on account of weather conditions.

Aug. 8 : **Spanish Civil War.**—A British Commission was appointed to report on the bombing of open towns in Spain.

United Kingdom.—A new record for the west-bound crossing of the Atlantic was set up by the "Queen Mary", which completed the crossing in 3 days 21 hours 48 minutes.

Sino-Japanese War.—Canton was heavily bombed by the Japanese.

Aug. 10 : **United Kingdom.**—A committee was appointed to inquire into the position of tenants of de-controlled houses.

Bolivia.—The Chaco Peace Treaty was ratified by Bolivia and Paraguay.

United Kingdom—United States.—A settlement permitted both countries to use the Canton and Enderbury Islands (Phœnix Group) in the Pacific Ocean for aeronautical facilities, and the question of title was left in abeyance.

Egypt.—The Senate refused permission for new taxation to be introduced by decree law during the recess

Aug 11 **Ecuador.**—President Alberto Enriquez resigned, Dr Manuel Borrero was elected provisional president

Poland.—The permanent delegate to the League of Nations was replaced by an ordinary consulate in Geneva, from which special delegates might attend League meetings when necessary

Russia — Japan. — Tension ceased officially and a local truce, at the Soviet-Manchurian frontier, was signed

Germany.—The "Condor", German monoplane, successfully completed a non-stop flight from Berlin to New York and back

Sino-Japanese War.—Japanese planes bombed Wuchang and Hanyang

Aug. 12 **New Zealand.**—The National Health Insurance and Superannuation (Social Security) Bill was introduced

Bolivia.—The Cabinet resigned.

Sino-Japanese War.—Hankow was heavily bombed by the Japanese

Aug 14 **United Kingdom.**—The "Queen Mary" set up a new record for the east-bound Atlantic crossing, with a time of 3 days 20 hours 42 minutes

Germany.—The powers of the Gestapo were extended to Austria.

Aug 15 · **United States.**—The Agricultural Adjustment Administration announced proposed crop subsidies for 1939.

Spain.—The Nationalist Government replied to the British Plan for volunteer withdrawals. It rejected the principle of proportional evacuation whilst accepting the general principle of withdrawal.

Germany.—Large-scale German manœuvres began.

Aug. 16 · **Spain.**—Dr Negrín's Republican Cabinet resigned.

Aug. 17 . **Germany.**—A German Legation was established in Manchukuo.

Aug. 18 : **France.**—M. Daladier denied any intention of devaluing the franc again on introducing exchange control.

Spain.—Dr. Negrín formed a new Cabinet

Canada.—President Roosevelt was made a Doctor of Laws in the Queen's University at Kingston (Ontario).

United Kingdom.—The Civil Air Guard Commissioners were appointed.

A new British endurance record for single-seater gliders was set up by Flying-Officer A. N. Young.

Rumania.—An agreement was signed by Rumania, Great Britain, and France to abolish the powers of the European Commission of the Danube.

Soviet Union.—"Aviation Day" was celebrated throughout the U.S.S.R.

Aug. 20 : **United States.**—Mr. Howard Hughes made a record non-stop flight from Los Angeles to New York.

Greece.—Greek and Turkish troops entered Thracian frontier territory, a zone which had been demilitarized under the Treaty of Lausanne, in accordance with the treaty signed on July 31 between Bulgaria and the States of the Balkan Entente.

Italy.—The 1931 agreement between the Fascist Party and the Catholic Action movement was reaffirmed.

United Kingdom.—A new world record for the half mile was set up by S C Wooderson at Motspur Park

Aug 21 **Germany.**—An Act was issued to establish a Special Court for the trial of offenders who are former Austrian Ministers and officials

France.—M Daladier broadcast an appeal for a modification of the forty-hour week

Soviet Union.—The second session of the Parliament of the U S S R closed

Hungary.—Admiral Horthy, the Regent, arrived in Germany on an official visit

Aug. 22 **Turkey.**—Ivan Mihailoff, former head of the I M R O. (Macedonian Revolutionary Organization) was deported.

Eire.—The personnel of the new Senate was completed

France.—A meeting of the French trade union organization (Confédération Générale du Travail) voted against any modification of the forty-hour week

United States—Mexico.—A second American protest was issued to the Mexican Government against the confiscation of U S agrarian properties

Aug 23 · **Hungary—Little Entente.**—The text of preliminary agreements between the Little Entente States was signed at Bled (Yugoslavia) Hungary's right to rearm was recognized.

Aug. 24 **United Kingdom.**—England won the last Test Match at the Oval.

Aug. 25 : **Sino-Japanese War.**—Japanese troops captured Juichang.

Aug. 26 : **Yugoslavia.**—A reconstruction of the Yugoslav Cabinet took place

Iran.—The Trans-Iranian railway was completed in the presence of the Shah.

Aug. 27 : **Motor Racing.**—A new world's land speed record was set up by Captain G. E. T. Eyston at Bonneville Salt Flats, Utah. He achieved 345·49 m.p.h.

Spanish Civil War.—The Government destroyer "Jose Luis Dias" was seriously damaged by the Nationalists and took refuge in Gibraltar harbour.

Aug. 29 : **Switzerland.**—The eighth International Congress for Historical Sciences opened in Zürich.

Egypt—United States.—The Montreux Convention providing for the abolishment of foreign capitulations in Egypt, was ratified by the U.S.

Netherlands.—The annual conference of the International Law Association was opened at Amsterdam.

Aug. 30 : **France.**—A decree was issued authorizing the extension of overtime work in the national defence industries

Aug. 31 : **Netherlands.**—The fortieth anniversary of Queen Wilhelmina's accession was celebrated.

Sept. 1 : **Spanish Civil War.**—The first report of the British Commission on the bombing of open towns was issued.

Italy.—A new decree announced the imminent expulsion of Jews established there since the World War.

Another decree stated that marriage was henceforth to be obligatory for all State employees over thirty who wished for promotion.

Mexico.—The thirty-seventh session of the Mexican Congress opened

Sept 2 **United Kingdom—Rumania.**—An Anglo-Rumanian Payments Agreement was signed at Bucharest, facilitating trade between the two countries

Argentina.—In accordance with a scheme for nationalization of the railways, the State purchased the Cordoba Central Railway

Germany—Czechoslovakia.—A conference was held at Berchtesgaden between Herr Hitler and Herr Henlein on the position of the Sudeten-Germans.

Sept 3 **United Kingdom.**—The government placed contracts with important Canadian firms for the supply of bomber aircraft on a long-range purchase programme

Rugby Football.—South Africa beat Great Britain by twenty-six points to twelve.

Brazil.—Sentence was passed on prisoners taken during the May Fascist (Integralista) rising

Sept. 4: **Hungary.**—The Premier, Dr Imrédy, announced conscription and wide land reform measures.

Spanish Civil War.—Nationalists captured Corbera, on the Ebro front.

Sept. 5: **Chile.**—An attempted rebellion by workers and students calling themselves "Nazistas" was put down with a loss of fifty-nine lives.

Lawn Tennis.—By beating Australia at Philadelphia, the United States retained the Davis Cup.

Italy.—Italian newspapers were ordered to refuse publicity or advertising orders from any Jewish firms.

Alexandretta.—Henceforth the Sanjak is to be officially known as the "Hatay." Mr. Tayfour Senkmen was elected president.

United Kingdom.—The Trades Union Congress opened at Blackpool.

Germany.—The annual Congress of the National Socialist Party opened at Nuremberg.

Sept. 6: **Czechoslovakia.**—Proposals to negotiate on the grievances of the Sudeten-Germans were put forward by the Czechoslovak Cabinet.

France.—M. Daladier announced the necessity for military precautions on the Franco-German frontier.

Italy.—Further anti-semitic measures were carried out, nineteen Jewish officials of the Ministry of the Interior being dismissed.

United Kingdom.—Yorkshire remained county cricket champions.

Sept. 7: **Czechoslovakia.**—Following incidents with police at Maehrisch-Ostrau, the Sudetens suspended negotiations with the Czech government.

France.—Military control was instituted in Marseilles to quell strike disputes.

United States.—A new world record for a mass long-distance flight was set up by seventeen bimotored United States Navy bombing planes.

Sept. 8: **Chile.**—The Chilean government was granted extraordinary powers to declare a state of siege in consequence of the "Nazista" rising.

Italy.—The Italian government announced its neutrality with reference to the Czechoslovak situation, but "readiness for any emergency"

Sept 9: **Australia.**—A national coal strike was declared by the Australian Miners' Federation

Sept 10 **Germany.**—Aircraft was debarred from flying over the Rhineland

Rugby Football.—The third and last match against South Africa was won by Great Britain by 21 points to 16

Sept 12: **France.**—A settlement was obtained between the government and the Marseilles dockers

India.—Grants made by H M Government for defence expenditure would, it was announced, be increased

Germany.—At the closing of the Nuremberg Congress Herr Hitler demanded self-determination for Sudeten-Germans.

Netherlands.—Salvage operations on the "Lutine" were abandoned

League of Nations.—The 19th session of the League Assembly opened under the presidency of Mr De Valera.

Sept 13: **Czechoslovakia.**—Martial law was declared in the frontier districts.

United Kingdom.—Mr. Chamberlain met the Defence Minister and Chiefs of Staff in Downing Street, on the situation arising in Czechoslovakia

Poland.—President Moscicki dissolved Parliament.

Sept. 14: **Germany.**—The new "Graf Zeppelin", LZ130, made her first trial flight from Friedrichshafen.

Australia.—The Cabinet declared its intention of supporting Britain in any action internationally necessary.

Sept 15: **United Kingdom.**—Mr. Chamberlain flew to Berchtesgaden for a special conference with Herr Hitler on the crisis arising over the demand of the Sudeten-Germans.

At Bonneville Salt Flats Mr. John Cobb beat Captain Eyston's world land speed record, with a speed of 350·20 m.p h.

Sept 16: **United Kingdom.**—Averaging 350·5 m.p h, Captain Eyston regained the world's land speed record.

Italian East Africa.—Afghanistan recognized the Italian Empire.

Chile.—A new Cabinet was formed.

Sept 17: **Czechoslovakia.**—A state of emergency was proclaimed

United Kingdom. — Sir Malcolm Campbell set up a new world speed-boat record, averaging 131·41 m.p.h. on Lake Hallwil, Switzerland.

Sino-Japanese War.—Wusueh, on the north bank of the Yangtze, was occupied by the Japanese.

Sept. 18: **United Kingdom—France.**—MM. Daladier and Bonnet arrived in London for consultation on the crisis.

Italy.—Signor Mussolini advocated plebiscites for all minorities.

Sino-Japanese War.—Japanese bombs inflicted heavy damage on Kwangsi towns.

Sept. 19: **Czechoslovakia.**—A joint plan for the solution of the Sudeten-German problem was submitted to Prague by the British and French governments. This provided for the cession to the Reich of certain regions thickly populated by the Sudeten-Germans.

Sino-Japanese War.—Kwangchow was captured by the Japanese.

Sept 21: **Czechoslovakia.**—Under Anglo-French pressure the Czechoslovak government accepted the London plan.

Poland.—The Polish government denounced the 1925 minority treaty with Czechoslovakia.

Spanish Civil War.—The Spanish government decided on a complete withdrawal of all non-Spanish combatants from government forces, and asked for the appointment of an international commission for the purpose.

Sept. 22: **Czechoslovakia.**—Indignation at the acceptance of the Anglo-French plan forced the resignation of the Prague Cabinet. General Sirový formed a new Cabinet.

United Kingdom.—Mr. Chamberlain met Herr Hitler at Godesberg; the conversation was adjourned, owing to fresh demands for the Sudeten-Germans

Sino-Japanese War.—In the presence of Japanese army leaders the autonomous administrations of Peking and Nanking were formally amalgamated.

Sept. 23 **Czechoslovakia.**—The tension between Germany and Czechoslovakia continued. President Beneš ordered general mobilization

Germany.—There were extensive movements of German troops on the Rhine.

Sept. 24: **United Kingdom.**—Mr. Chamberlain returned to London, bringing Herr Hitler's final terms for settlement of the Czechoslovakian problem.

Czechoslovakia.—General mobilization was completed.

France.—Certain classes of reservists were called up.

Sept. 25: **United Kingdom—France.**—MM. Daladier and Bonnet, and General Gamelin flew to London to consult with the Premier and Lord Halifax.

Owing to the tension between Germany and Czechoslovakia emergency measures were set in action throughout the country; Londoners were fitted with gas masks.

Sept. 26: **United Kingdom—France.**—Details of the Anglo-French plan for solution of the Czechoslovakian problem were published.

The War Office and Air Ministry called up anti-aircraft and coastal defence units of the Territorial Army.

Germany.—Herr Hitler stated that demands on Czechoslovakia must be complied with by Oct. 1.

United States.—An appeal for peace was made by President Roosevelt to Herr Hitler and Dr. Beneš.

Sept. 27: **Czechoslovakia.**—The government's declaration that Herr Hitler's Godesberg demands were "absolutely and unconditionally unacceptable" was published.

United Kingdom.—The largest ship in the world, the Cunard-White Star liner "Queen Elizabeth", was launched at Clydebank by H.M. Queen Elizabeth.

At 8 p.m. the Prime Minister broadcast a message to the Empire, expressing the hope that war in Europe might still be averted.

The Admiralty announced mobilization of the Fleet.

Poland.—A note was sent to Czechoslovakia demanding the evacuation of Teschen by Czech troops.

Sept 28 **United Kingdom.**—During a speech in the House of Commons Mr Chamberlain received a message from Herr Hitler, inviting him, with Signor Mussolini and M. Daladier, to a conference at Munich on Sept 29

United States.—President Roosevelt made a second appeal for the maintenance of world peace to Herr Hitler

Spanish Civil War.—The International Brigade was removed from the Ebro firing-line.

Sept. 29 **United Kingdom.**—The Home Office issued details of plans for the evacuation of London by civilians, in the event of necessity.

Sir Frank Bowater was elected Lord Mayor of London.

Germany.—The Four-Power Conference called by Herr Hitler at Mr Chamberlain's suggestion opened in the "Fuhrerhaus" at Munich

Italy.—The Pope broadcast an appeal for peace.

Sino-Japanese War.—The Japanese entered Tienchiacheng, on the north bank of the Yangtze River.

Sept 30 **Germany.**—The Munich Conference ended with the signing of an agreement to cede large areas of Czechoslovakian territory to Germany.

Poland.—An ultimatum was issued to Czechoslovakia demanding cession of the disputed territory of Teschen, with the alternative of Polish invasion of that area.

United Kingdom.—Mr. Chamberlain returned to London.

Oct 1: **Czechoslovakia.**—The Teschen district was ceded to Poland.

German troops began occupation of the Sudeten areas

United Kingdom.—Mr A. Duff Cooper, First Lord of the Admiralty, resigned as a protest against the Government's foreign policy

Palestine.—Fifty-two Arabs were killed in encounters with police and troops

Oct. 2: **League of Nations.**—The 19th session of the League Assembly was adjourned.

Hungary-Czechoslovakia.—A Czech-Hungarian commission was authorized to discuss the Hungarian minority in Czechoslovakia.

Germany.—A new internal loan was floated to finance public works, reconstruction, and consolidation.

Oct. 3: **Czechoslovakia.**—Hitler's troops entered the Asch and Eger Sections.

Oct. 4· **Czechoslovakia.**—Following the resignation of M. Cermak, the Government resigned, but was immediately reconstituted by General Sirový.

France.—An ambassador to Italy replaced the Chargé d'Affaires.

Oct. 5: **United Kingdom.**—The Lord Mayor of London opened a Mansion House Fund for Czech refugees.

Norway.—A diplomatic agent to Nationalist Spain was appointed.

Czechoslovakia.—President Beneš resigned.

Oct. 6: **United Kingdom.**—A three-day debate on foreign policy ended with a vote of confidence in the Government.

Sino-Japanese War.—The United States notified Japan to preserve the "Open Door" in China.

Oct 7 **Japan.**—New restrictions in the exchange control regulations were announced

Belgium.—The Government launched a new Public Works Loan

Germany.—The passports of Jews living in Germany were invalidated and replaced by identity cards

Oct 8 **United Kingdom.**—Extensions in the air defence programme were announced

The seaplane "Mercury" completed a flight from Dundee to South Africa

A Royal Visit to Canada was arranged for 1939

India.—The Moslem League denounced Congress policy at a conference at Karachi

Italy.—It was decided to withdraw 10,000 legionaries from Spain

Oct. 9· **Belgium.**—The first German Ambassador to Belgium, Herr von Bulow-Schwante, took up his duties

Germany.—In Vienna anti-religious rioting broke out.

France.—In consequence of a congratulatory telegram sent by M Flandin to Herr Hitler after the Munich Agreement, several prominent members of the Democratic Alliance resigned.

Sino-Japanese War.—Japanese warships advanced farther up the Yangtze

Oct. 10 **Bulgaria.**—General Peeff, Chief of the General Staff of the Bulgarian Army, was assassinated in Sofia.

United Kingdom.—The War Office began a reorganization of the Field Force units of the Territorial Army.

Poland.—The taking-over of the Teschen region was completed with the Polish occupation of Karwina.

Yugoslavia.—The Skupshtina (Chamber) was dissolved

Estonia.—A new neutrality law was introduced

Czechoslovakia.—The occupation of districts assigned to Germany by the Munich Agreement was completed.

Sino-Japanese War.—Two Japanese divisions were defeated at Teian and Wuning after a three-day battle.

South America.—The Chaco Paraguay-Bolivia boundaries were announced.

Oct. 11: **Soviet Union.**—A protest was issued against a reference by Lord Winterton to the attitude of the U S S.R. in the crisis

Germany.—A decree was issued whereby the Reichsmark should supersede the Czech Crown as legal tender from October 31.

Egypt.—The Moslem Congress pronounced the Balfour Declaration null and void.

Oct. 12: **France.**—New ambassadors were appointed to Italy, Germany, and Turkey

Paraguay.—A new Cabinet was constituted

Sino-Japanese War.—A large Japanese force landed in Bias Bay, near Hong Kong.

Oct. 13· **Australia.**—A reconstruction of the N.S W. Cabinet took place.

United States.—The American Federation of Labor Convention concluded its sittings at Houston (Texas).

Spanish Civil War.—Ten thousand Italian volunteers left Cadiz.

Oct 14 **United States.**—Mr Roosevelt stressed the need for a re-examination of national defence requirements.

Palestine.—Telephone and telegraph wires were cut by rebels.

Oct 15 **Hungary-Czechoslovakia.**—Negotiations for a settlement of the frontier problem were reopened

Sino-Japanese War.—Following their landing at Bias Bay, the Japanese captured Waichow, twenty miles north

New Zealand.—The Labour Party was returned, with Nationals second

Oct 16 **Germany—Brazil.**—The Brazilian Government requested the recall of the German Ambassador, whereupon the German Government demanded that the Brazilian Ambassador leave Berlin.

Belgium.—At the municipal elections Catholics, Liberals, and Socialists largely replaced Rexists, Communists, and Flemish Nationalists

Oct. 17 **Canada.**—The Trans-Canadian air service between Montreal and Vancouver was inaugurated

Sino-Japanese War.—The evacuation of Canton by the Chinese was in full swing.

Oct 18 **Germany.**—Credit amounting to £4,800,000 was granted to Poland.

Palestine.—Military control was established.

Oct 19 **Germany.**—A new order rendered all inhabitants of the Reich liable for special service in case of national emergency.

Poland.—The independence of Manchukuo was recognized.

Palestine.—British troops reoccupied the old City of Jerusalem

Oct. 20: **Turkey.**—A new Four-Year Plan of economic development was announced by the Prime Minister

Italy.—10,000 legionaries arrived at Naples from Spain.

Czechoslovakia.—The Communist Party was dissolved.

Oct. 21: **Sino-Japanese War.**—Japanese advance guards entered Canton.

Oct. 22· **Italy.**—Aviation. A new altitude record was set up by Lieut.-Col. Mario Pezzi.

France.—The results of senatorial elections showed a swing to the right with consequent weakening of the "Front Populaire".

Sino-Japanese War.—The British gunboat "Sandpiper" was bombed by six Japanese aeroplanes at Changsha.

Hungary-Czechoslovakia.—Disagreement over Hungarian claims for frontier revision in Czechoslovakia led to massing of troops on the border.

Oct. 23· **Brazil.**—Further sentences were passed on persons who took part in the Integralist revolt of May 1938.

Oct. 24: **Ecuador and Peru.**—The President of Ecuador appealed to the Presidents of Argentina, Brazil, the United States, Uruguay, and Chile, for arbitration in the boundary disputes between Ecuador and Peru.

Hungary—Czechoslovakia.—Hungary made new demands for frontier revision.

Oct. 25: **Australia.**—H.R.H. the Duke of Kent was appointed Governor-General in succession to Lord Gowrie.

Egypt.—The Egyptian Defence Council decided to create an Egyptian Navy.

Sino-Japanese War.—Marshal Chiang Kai-shek evacuated Hankow with his staff. Japanese forces entered

Mexico.—The Mexican Government rejected the petition of foreign oil companies for a revocation of the decree expropriating the industry.

Germany - Yugoslavia. — A German-Yugoslav trade agreement was signed

Chile.—Pedro Aguirre Cerda, candidate of the Popular Front, was elected President.

Oct 26. **Sino-Japanese War.**—Japanese forces completed the occupation of Hankow, Hanyang, and Wuchang.

Italy.—The Fascist Grand Council decreed the inclusion of the four provinces of Libya in the territory of Italy.

Hungary - Czechoslovakia.—German and Italian arbitration were accepted on the frontier dispute.

Oct. 27· **United Kingdom.**—Consequent upon the resignation of Mr. Duff Cooper from the Admiralty, fresh Cabinet appointments were made

The 85th Session of the governing body of the International Labour Office ended

Palestine.—The Government placed a limit on foreign immigration

Sino-Japanese War.—A supervised Chinese government was set up by the Japanese in the Hankow and Wuhan areas.

Oct. 28: **United Kingdom.**—A Committee was set up to control flying, with special reference to public safety.

France.—A disastrous fire broke out at Marseilles; 73 persons died.

Germany.—A large-scale expulsion of Polish Jews from the Reich took place.

Japan. — Hachiro Arita succeeded Gen. Ugahi as Foreign Minister.

Oct. 29. **Poland.**—Several hundred Germans were arrested, as a counter-measure to the expulsion of Polish Jews from Germany.

Hungary — Czechoslovakia. — Italo-German Conversations were held on the Hungarian frontier demands.

Palestine.—Two thousand Arabs suspected of rebellious activities were rounded up in Gaza.

Oct. 30: **United Kingdom.**—The Glasgow Empire Exhibition closed; total attendance was 12,593,232.

Oct 31: **Spanish Civil War.**—Nationalist planes bombed 250 miles of Republican Territory on the Mediterranean.

Germany.—General Beck, Chief of the General Staff, and General von Rundstedt, Commander of the First Army Group, retired.

Herr Henlein was appointed Gauleiter (Regional Party Leader) of Sudetenland.

Malaya.—The Legislative Council decided to make a special contribution to Imperial Defence.

Portugal.—A new National Assembly was elected, from a list approved by Dr. Salazar, the Prime Minister.

Nov. 1: **France.**—M. Paul Reynaud was appointed Minister of Finance.

Poland—Czechoslovakia.—The frontier dispute was settled by a further cession of Czech territory.

South Africa—Portugal. — An Air Agreement was arranged between the two countries.

Bulgaria — Yugoslavia. — Bulgar-Yugoslav conversations took place

United Kingdom.—Major Beith (Ian Hay) was appointed Director of Public Relations at the War Office.

Nov 2· **United Kingdom.**—The Anglo-Italian Agreement came into force.

Minimum working conditions for domestic servants were laid down in a charter for the newly-created National Union of Domestic Workers.

Denmark.—A new State Loan was announced

Germany—Poland.—Negotiations on the refugee question began in Berlin

Hungary—Czechoslovakia.—As a result of Italo-German arbitration, Hungary receive territorial concessions.

Sino-Japanese War.—Japanese forces bombed Sheppi, south of Canton.

Nov. 3· **Eire.**—A new trade agreement with Germany was signed in Dublin.

Nov. 4 **United Kingdom.**—Parliament was prorogued.

Nov 5. **Greece.**—Archbishop Damaskinos of Corinth was elected Metropolitan of Athens and Primate of all Greece.

Soviet Union.—M. Molotov condemned the attitude of France and Germany in the Czech crisis

France.—The congress of the French Socialist Party opened.

Nov. 6: **Australia.**—Mr Playford, former Minister of Crown Lands, succeeded Mr. Butler as Premier of South Australia.

Nov 7: **Australia.**—The Federal Cabinet was reconstructed

Aviation.—Two R A.F. Vickers-Wellesley bombing planes set up a new world record for long-distance flights; from Egypt to Australia in 48 hours.

France and Italy.—The restrictions placed on tourists by the two governments were mutually withdrawn.

International Labour Office.—Japan notified the I L.O. of its resignation

France.—Herr Ernst vom Rath, German Diplomatic official, was shot in Paris by a Polish-Jewish youth of 17, Grynszpan, and died of his wounds. In Berlin there were anti-Jewish riots.

Spanish Civil War.—Republican 'planes bombed the village of Cabra.

Nov. 8: **United Kingdom.**—The new session of Parliament opened.

Australia.—Sir Winston Dugan was appointed Governor of Victoria.

United States.—Congressional and governatorial elections took place. The Republican Party made substantial gains.

Sino-Japanese War.—A Japanese Note to the heads of foreign missions in China warned them of the extension of hostilities to the Provinces of Shensi, Hupeh, Hunan, and Kwangsi.

Nov. 9· **United Kingdom.**—Major Gardner, the British racing motorist, set up a new world land-speed record.

S. Africa—Italy.—S. Africa recognized the Italian Empire.

Palestine.—The Report of the Woodhead Commission on Partition was published.

Italy.—The first part of the new Fascist Civil Code was approved by the Cabinet.

Nov. 10: **United Kingdom.**—Sir Kingsley Wood announced R.A.F. expansion, including a 30 per cent increase in fighter planes

Germany.—Anti-Jewish violence spread

Italy.—Two laws embodying anti-Jewish measures were passed.

Poland.—A new decree compelled the registration and calling-in of foreign securities.

Turkey.—Mustafa Kamâl Ataturk died.

Nov 11· **Turkey.**—General Ismet Inonü was unanimously elected President by the Grand National Assembly.

United Kingdom.—A public corporation was set up to acquire Imperial Airways and British Airways.

Nov. 12 **United States—Mexico.**—The Mexican government agreed to pay for expropriated agrarian property belonging to American owners.

Turkey.—A new Cabinet was formed, still under M. Jela Bayer.

France.—A three-year economic plan drawn up by M. Reynaud was approved by the Council of Ministers

Germany.—Decrees were made to exclude Jews from membership of co-operative societies. Fines of a billion marks were imposed on Jews to make good the losses in the anti-Jewish riots.

Nov. 13 **Yugoslavia.**—A statement emphasizing the inviolability of Yugoslavia's frontiers was made by her Prime Minister, M. Stoyadinović

Egypt.—Recognition was accorded to the Italian Empire.

Poland.—Senatorial elections were held.

Palestine.—British troops occupied Jericho.

Nov. 14 **Lithuania.**—The President, Dr. Antanas Smetona, was re-elected for a further 7-year term.

Brazil—Germany.—Barter trade between the two countries was resumed.

Nov. 15 **Bulgaria.**—A new Cabinet was formed.

United Kingdom.—King Carol of Rumania and Crown Prince Michael arrived on an official visit.

Nov. 16 **United Kingdom—Italy.**—Great Britain recognized the Italian Empire.

Hungary.—The premier, Dr. Imrédy, reorganized the Cabinet.

Nov. 17: **United Kingdom—United States.**—The Anglo-American Trade Agreement was signed at Washington.

Egypt.—A daughter was born to Queen Farida.

Germany—United States.—Germany refused responsibility for Austria's American debts.

Nov. 18 **United States.**—The Convention of the Congress for Industrial Organization ended at Pittsburgh.

Nov. 19: **France.**—France recognized the Italian Empire.

Germany.—A new Reich loan was issued for undertakings in Austria and the Sudeten-Germanland.

United States.—The U.S. Navy Department placed orders for three 35,000-ton battleships.

Czechoslovakia.—In Prague, autonomy was voted for Slovakia and Carpatho-Ukraine.

Nov. 20: **Norway.**—Queen Maud of Norway died in London.

Nov 21 **Palestine.**—British troops re-occupied Beersheba

Germany—Czechoslovakia.—The final frontier between Germany and Czechoslovakia was confirmed

West Indies.—St Lucia suffered a disastrous landslide

Nov 22 **'Iraq—Italy.**—'Iraq recognized the Italian Empire

Australia.—Proposed amendments to the Constitution were discussed in the House of Representatives

Germany.—A collective fine of 1,000 million Rm. was imposed on German Jewry as punishment for the assassination of Herr vom Rath

Danzig.—The Nuremberg laws were adopted.

Nov 23 **Italy—Germany.**—An agreement for closer cultural co-operation between Italy and Germany was signed in Rome.

Portugal.—The British Institute was opened at Lisbon by Dr Pacheco, Minister of Education.

France.—Mr. Chamberlain and Lord Halifax paid an official visit to Paris

United Kingdom.—Viscount Nuffield undertook to present an "iron lung" to every hospital in the British Empire.

Spanish Civil War.—Three raids were made on Barcelona, inflicting many casualties.

Nov. 24 **Poland.**—Decrees "for the defence of the Polish State" were promulgated; Freemasonry was abolished, strikes and lock-outs prohibited.

France.—"Sit-down" strikes spread in protest against modification of the 40-hour week and other items of M Reynaud's national recovery plan

Rumania.—King Carol visited Herr Hitler at Berchtesgaden.

Nov. 25: **Japan—Germany.**—A cultural agreement between Japan and Germany was initialled in Tokio.

Southern Rhodesia.—The proposed expansion and reorganization of the Defence Force was outlined.

Nov. 26: **France—Rumania.**—The French Legation in Bucharest and the Rumanian Legation in Paris were both raised to the status of embassies.

Bolivia.—A nation-wide state of siege was proclaimed after a revolt attributed to Leftist agitators

Diplomatic relations were renewed with Paraguay.

Nov. 27: **Poland—Soviet Union.**—A Russo-Polish agreement of friendship was made.

Nov. 28: **United States—Philippines.**—President Roosevelt approved a report recommending independence for the Philippines in 1946, and U.S.-Filipino economic co-operation until 1961.

Nov. 29: **Egypt.**—A credit of £E1,023,000 was opened, for the construction of a nucleus fleet.

Spanish Civil War.—Sweden withdrew from the sub-committee of the Non-Intervention Committee.

Sino-Japanese War.—Japan refused to open the Yangtze to commercial navigation "while the present military situation continued".

France.—A one-day nation-wide strike began at 5 p.m. among printers and pressmen.

Nov 30 **France.**—Government emergency measures led to the failure of a general strike

Soviet Union.—M Mikoyan was appointed Commissar for Foreign Trade

Czechoslovakia.—Dr Emil Hácha was elected President of Czechoslovakia, General Sirový resigned the Premiership which was taken over by M. Rudolf Beran

Rumania.—M Codreanu and thirteen other "Iron Guard" leaders were shot by their guards during an alleged attempt at escape

Italy.—Demands for Tunis, Corsica, and Nice were made during a demonstration in the Italian Chamber of Deputies.

Dec. 1 **Czechoslovakia.**—M Beran formed a new Cabinet

France—Italy.—The Italian Government disclaimed responsibility for incidents in the Chamber of Deputies

Iceland.—The twentieth anniversary of independence was celebrated

Belgium.—Diplomatic relations with Republican Spain were broken off

Dec 2: **United Kingdom—Italy.**—Italy signed the London Naval Treaty.

United Kingdom.—Negotiations were completed for large wheat purchases from the U S.A.

Czechoslovakia.—An amnesty for many political prisoners was published

France.—Government action was taken against leaders in the abortive general strike

Poland.—A 15-year plan of economic development was outlined in the Seym by the Finance Minister.

Sino-Japanese War.—Japanese air raids on Kweilu caused heavy casualties.

Dec. 3: **Italy.**—Italian journalists were forbidden to work for foreign news agencies and newspapers as from Jan 1, 1939

Belgium.—A new Finance Minister, M. Albert Jannsen, was appointed.

Poland.—Demands for self-government were made by the Ukrainian minority.

Dec 4: **Czechoslovakia.**—Czechoslovakia announced her intention to co-operate with Germany.

Balkan Entente.—A friendly talk took place between the Chiefs of Staff of the States of the Balkan Entente.

Dec. 5 **United Kingdom.**—Important changes in high Army commands were made.

Canada.—£25,000 was voted by the British Columbia Legislature for the highway through British Columbia connecting Alaska with the U.S.A.

Dec. 6: **France—Germany.**—A joint peace declaration was signed by the Foreign Ministers of the two countries, M. Bonnet and Herr von Ribbentrop.

New Zealand.—A new Government economic policy imposed restrictions on foreign trade and exchange.

Australia.—A scheme for further expansion of the three-year defence programme was discussed in the House of Representatives.

Dec. 7: **Palestine.**—All invitations to the forthcoming London discussions on the Palestine question were accepted.

Lithuania.—A new Cabinet was formed.

Brazil—Venezuela.—A non-aggression pact was signed between the two countries

Italy.—Anti-French demonstrations took place in Rome, Naples, and other Italian cities

France.—A Franco-Siamese treaty of friendship, commerce, and navigation was signed at Bangkok.

Dec 8. **Soviet Union.**—M. Lavrenti Beria was appointed Commissar of the Interior and Head of the State Political Police

France.—Troops were sent to Tunis to prevent clashes between French and Italians

Australia.—A new loan was issued in London by the Australian Commonwealth Government

Germany.—Germany's first aircraft-carrier, the "Graf Zeppelin", was launched.

Dec. 9 **United States.**—The eighth Pan-American Conference opened at Lima, Peru

Poland.—An autonomy bill for the Ukraine was introduced in the Seym.

Memel Territory.—The leader of the Memel Germans demanded reunion with Germany.

Spain.—A decree was issued by the Republican government restoring freedom of worship

South Africa.—A manifesto laying down the fundamental principles of national life was signed on behalf of the United and Nationalist Parties

Dec 10. **Rumania.**—The Government stated that all Iron Guards property would be sold by auction

Dec 11. **Switzerland.**—A decree published by the Federal Government was directed against foreign propaganda and anti-democratic activities

Yugoslavia.—General elections resulted in a government victory.

Memel Territory.—Elections for the new Diet resulted in a large German majority.

Germany.—Four trade agreements with Rumania were signed in Bucharest.

Dec. 14: **Italy.**—The Bill replacing the Chamber of Deputies by the Chamber of Fascisti and Corporations was passed.

New Zealand.—A Cabinet re-shuffle enabled Mr. Walter Nash, Minister of Finance, to undertake his new duties as Minister of Social Security.

Dec. 15. **Suez Canal.**—A reduction was made in the Suez Canal dues.

Spain.—Full citizenship rights were restored to ex-King Alfonso by the Council of Ministers of Nationalist Spain.

Switzerland.—Dr. Philip Etter was elected President of the Confederation for 1939.

Czechoslovakia.—M. Jan. Masaryk, Czechoslovak Minister in London, resigned.

Canada.—M. Jean Desny was appointed first Canadian Minister to Belgium and Holland.

Rumania.—The "Party of National Regeneration" was formed, no other political parties or activities being permitted.

United States.—A $25 million credit was authorized for China.

Dec. 16: **Soviet Union.**—Japanese fishing in Russian waters was restricted.

South Africa.—Over 100,000 persons attended the stone-laying ceremony of a great national monument to Voortrekkers, near Pretoria.

Dec 17 **Germany.**—Dr Schacht left London after a visit as unofficial inquirer of the German Government

Poland.—A protest was made to Czechoslovakia against the activities of Ukrainian and anti-Polish organizations on Czech territory.

United States.—A Swiss-American decree accorded reciprocal rights to Swiss nationals born in the U S A. and Americans born in Switzerland

A treaty of commerce and navigation was signed with 'Iraq at Baghdad

Lithuania.—Certain autonomous rights were promised to Memel but Lithuania refused to accept economic or political domination by any great Power.

Sino-Japanese War.—The Chinese reoccupied Tamshui and Pingshan.

Dec. 18 **Italy.**—The new city of Carbonia, in Sardinia, was inaugurated by Signor Mussolini.

Czechoslovakia.—Elections for the new autonomous Slovak Diet resulted in a 98 per cent vote for the Government

Scandinavia.—Plans for a common Nordic University were discussed by Education Ministers of Denmark, Norway, Sweden, and Finland.

France.—The Prime Minister was given complete control over all news broadcasts.

Dec. 19 **Danzig.**—A plan to expel Jews from Danzig was published

France.—Details of the naval programme revealed that new warships of a total tonnage of 300,000 were being laid down

Germany—Soviet Union.—The trade agreement for 1938 was continued.

Dec 20 **United Kingdom.**—A weakness in sterling caused the embargo on foreign issues in the London market to be tightened up.

The new Voluntary National Register was discussed in the House of Commons.

Hungary.—Adherence to the Rome-Berlin axis was formally proclaimed.

Dec. 21 · **Poland.**—The Ukrainian autonomy Bill was rejected

London Naval Treaty.—Representatives of Great Britain, Denmark, Finland, Norway, and Sweden signed a naval accord based on the London Naval Treaty of 1936.

Belgium.—The Senate approved the "Aerial Defence of the Country" Bill.

Rumania.—M. Grigore Gafencu was appointed Minister of Foreign Affairs.

Yugoslavia.—Dr. Stoyadinovitch reconstructed his Cabinet

Soviet Union—Poland.—A trade agreement was signed.

Dec 22: **France—Italy.**—The Italian government notified France that she considered as null and void the 1935 agreement regarding Tunisia.

Canada—Italy.—Canada recognized the Italian Empire.

Poland—Lithuania.—A trade agreement signed at Kovno restored commercial relations between the two countries.

Sino-Japanese War.—Japan's peace terms to China were announced.

Dec. 23 **United States.**—Reforms in U S. railroad legislation were proposed

Spanish Civil War.—A new Nationalist offensive was launched against Catalonia

Dec. 24 **Soviet Union—Italy.**—Following anti-Soviet demonstrations at Milan consular relations between Soviet Russia and Italy ended.

Dec. 26. **'Iraq.**—General Nuri es-Said formed a new Cabinet

Sino-Japanese War.—Chung King was raided by over fifty Japanese aeroplanes

Imperial headquarters at Tokyo claim occupation of 47 per cent of the areas of China, with a population of 170 millions

Pan-American Conference.—The Conference closed with the signing of a document embodying 110 resolutions, declarations, and recommendations

Dec 27 · **United States.**—A plan for the annual training of 20,000 civilian pilots was put forward by the National Youth Administration.

Hungary.—A new Jewish Restrictions Bill was introduced

Czechoslovakia.—The Communist Party was dissolved

Dec. 28 **Czechoslovakia.**—French interests in the Czech Skoda Works were sold to the Czechoslovak government.

Holland.—Eight bills concerned with emergency and war-time precautions were introduced

Spanish Civil War.—The British s.s "Stancroft" was sunk during a Nationalist air raid on Barcelona.

Italian troops reached Granadella.

Egypt.—The Anglo-Egyptian Treaty was upheld by the Chamber, and a Wafdist censure motion heavily defeated

Cricket.—The first Test Match between England and South Africa ended at Johannesburg in a draw.

Sino-Japanese War.—Japan's peace terms were unequivocally rejected by Marshal Chiang Kai-shek.

Dec. 29: **Iran.**—Diplomatic relations with France were broken off.

Turkey.—The President, Ismet Inönü, was elected leader for life of the Republican People's Party, the only political organization permitted.

Dec. 30: **Germany.**—The German government claimed a right under the Naval Agreements of 1935 and 1937 to more submarines and cruisers.

Spanish Civil War.—The Republican destroyer "Jose Luis Diaz" in attempting to leave Gibraltar was intercepted by Nationalists and was eventually interned at Gibraltar.

Dec. 31: **Poland.**—The Executive Council of the Ukrainian Undo Party decided to uphold Ukrainian demands for autonomy.

Australia.—The sixth World Jamboree of Scouts was opened at Bradfield, near Sydney.

United States.—A Note protesting against Japanese policy in China was issued by the United States.

Mr Roosevelt announced that there would be no change in the silver policy.

1939

Jan. 1: **China.**—The Kuomintang Executive Committee expelled Mr. Wang Ching from the Party and denounced his "peace movement".

France.—The Finance Bill was passed.

United States.—Extensive Stock Exchange reforms became effective.

Czechoslovakia.—Jewish teachers in German schools were compulsorily retired on pension

Germany.—The new Labour laws came into effect.

Jan 2 **Sino-Japanese War.**—The Japanese reoccupied Weichow Island in the Gulf of Tongking

France.—M Daladier began his tour of Corsica, Tunisia, and Algeria.

Eire and Northern Ireland.—A new Irish association was founded to promote co-operation between the people of Eire and Northern Ireland

Jan 3: **United States.**—A report recommending extensive improvement and enlargements of naval establishments on both the Pacific and Atlantic coasts was presented to Congress

Jan 4. **Japan.**—The Cabinet resigned.

Cricket.—The second Test Match at Capetown ended in a draw.

United States.—Mr. Roosevelt's speech to Congress urged national unity, and the defence of democracy.

Rumania.—The Statute of the Party of National Regeneration was promulgated by Royal decree.

Jan 5 · **Japan.**—Baron Hiranuma formed a new government.

United States.—The 1939-40 Budget showed a heavy deficit coupled with increased expenditure for national defence.

Prof. Felix Frankfurter of Harvard University was nominated as a Justice of the Supreme Court.

Jan 6: **Czechoslovakia.**—Fighting took place on the Hungarian frontier, in the neighbourhood of Munkacs.

Great Britain.—The Bank of England's monetary policy included the reimposition of foreign exchange embargos and £350 millions in gold was transferred to the Exchange Equalization Account. The fiduciary note issue was increased.

Jan 7: **Memel Territory.**—Herr Baldschus, President of the Directory since 1935, resigned.

Jan. 8 **Denmark.**—The Congress of the Danish Social Democratic Party was opened.

United States.—Thomas Mooney, the former Labour leader, was unconditionally pardoned and released after 22 years' imprisonment on a charge of complicity in a dynamite explosion in San Francisco on Preparedness Day in 1916.

Sweden and Finland.—Partial remilitarization of the Aland Islands was arranged on a co-operative basis.

Jan. 9: **Bulgaria.**—A German economic mission arrived at Sofia.

Sino-Japanese War.—The Chinese reoccupied Tsengchu, 50 miles east of Canton.

Jan. 10: **Great Britain.**—Proposals were formulated by different sections of the shipping industry to "secure the maintenance of the British Mercantile Marine in the face of severe and increasing foreign competition, largely State-aided or artificially fostered".

Jan. 11: **Italy.**—Mr Chamberlain and Lord Halifax arrived in Rome on an official visit.

Siam.—Recent expansions in naval rearmament will make Siam as strong as Australia and second only to Japan as a sea-power in the Orient.

Sino-Japanese War.—In an offensive thrust across the Yellow River from Shansi the Chinese captured several towns

Jan 12: **Wheat.**—The Wheat Advisory Committee meeting at Rome made plans for a world wheat conference to deal with over-production.

Great Britain.—The co-ordination of A R P work in Greater London was announced

Turkey.—Dr. Tewfick Rustu Aras was appointed Ambassador to Great Britain, in succession to M. Felhi Okyar.

United States.—Mr Roosevelt asked Congress for $525 millions defence appropriation, and an additional $27 millions for strengthening the Panama Canal Zone.

Canada.—The fourth session of the 18th Federal Parliament opened.

Jan. 13 **Hungary.**—Manchukuo was officially recognized by Hungary

The government accepted the formal invitation from German, Italian, and Japanese ministers to join the Anti-Comintern Pact.

Suez Canal.—The Suez Canal Company stated its opposition to Italy's claims.

Great Britain.—The Executive Committee of the Labour Party rejected Sir Stafford Cripps' "Popular Front" memorandum.

Jan. 14: **Antarctica.**—New territory in Antarctica was annexed by Norway.

Jan. 15: **Egypt.**—Cabinet changes followed the resignation of Hassan Sabry Pasha, Minister of War, and his replacement by Hussein Pasha Sirry, Minister of Public Works

Spanish Civil War.—Tarragona fell to the Nationalists

Jan. 16: **Belgium.**—The Belgian Cabinet appointed an agent to Burgos.

Great Britain.—Arrangements were completed for the supply of steel air-raid shelters to occupants of small houses.

A number of bomb outrages, believed to be the work of the Irish Republican Army, occurred in London and the provinces.

League of Nations.—The 104th Session of the League Council opened

Manchukuo.—The Prime Minister announced his country's adherence to the Anti-Comintern Pact.

Jan. 17: **Japan-Soviet Union.**—A deadlock was reached in the Fisheries Convention dispute.

France.—The "Richlieu", the biggest battleship of the French Navy, was launched.

Great Britain.—An auxiliary Air Force Reserve was formed.

Japan.—Companies were established by Japan for the economic development of Northern and Central China.

Sino-Japanese War.—Protests were made by Britain and France against Japanese policy in China.

Jan. 18: **Rumania.**—The Hungarian minority decided to join the Party of National Regeneration.

Great Britain.—Further bomb outrages occurred

Sino-Japanese War.—The Japanese occupied Fayun, north of Canton

Jan 19 **Yugoslavia.** Conversations between Count Ciano and Dr Stoyadinović opened in Belgrade

Brazil.—A Five-Year Plan of national defence and public works was inaugurated by the President

Germany.—The cruiser "Seydlitz" was launched at Bremen

Aden.—The centenary of British rule was celebrated.

Jan 20 **Memel Territory.**—Herr Bertuleit, a prominent German Nazi, became the new president

Germany.—Dr Schacht was dismissed from the presidency of the Reichsbank. Dr Herr Funk, Minister of Economics, succeeded him

Czechoslovakia.—The Slovak Diet was formally opened at Bratislava. A new Cabinet was formed.

Jan 21 **Great Britain.**—The railways demanded a "square deal".

England beat Wales at Rugby football by 3–0.

Kenya.—An Immigration Advisory Board was set up to control the flow of refugees.

Belgium.—The Cabinet was reorganized Two Flemish academies were officially opened.

Germany.—A new decree enforced extra-military training of all able-bodied men between 17 and 45.

Soviet Union.—A forbidden zone of about forty miles radius was created around Leningrad.

Lithuania.—It was decided to construct a new port at Shventias, outside the Memel Territory

Spanish Civil War.—General Franco's troops captured Arbos, 29 miles from Barcelona.

Jan. 23: **Great Britain.**—An Advisory Council was appointed to utilize professional workers in wartime.

Cricket.—England won the third Test Match against South Africa

Spanish Civil War.—In the course of raids on Barcelona, one British ship was sunk and two were damaged.

Jan 24: **Great Britain.**—An inaugural National Service rally was held at the Albert Hall.

Skating.—The Ladies European Figure Skating Championship was retained by Miss Cecilia Colledge

Germany.—A cultural agreement between Germany and Nationalist Spain was signed at Burgos.

Spanish Civil War.—The Nationalists reached the suburbs of Barcelona. The Republican Government moved to Gerona, and the exodus of refugees began.

Soviet Union.—Following changes in the personnel and composition of the Council of People's Commissars, decentralization brought the total number of Commissariats to thirty-six.

Jan. 25: **Aviation.**—A new air service was arranged from Burma to Hong Kong through Yunnan.

Canada.—The defence programme was placed on a long-term basis.

Great Britain.—Sir Stafford Cripps was expelled from the Labour Party by a vote of eighteen to one.

A Committee was appointed to consider Marriage Law Reform

Turkey.—Following the resignation of M. Telal Bayar, Dr Refik Saydam formed a new Cabinet

Boxing.—Joe Louis, the world heavyweight champion, beat John Henry Lewis in 2 min 29 sec at New York.

Italy.—Sixty thousand men of the 1901 class were called up for training on Feb. 1.

Poland.—Herr von Ribbentrop visited Warsaw for conversations with Colonel Beck.

Jan 26 **Spanish Civil War.**—Barcelona fell to the Nationalists

Canada.—The expansion of the Air Force was announced.

Rumania.—Professor Vasile Cristesur, leader of the Iron Guard, was shot at Bucharest Several Iron Guard Terrorists were also arrested.

Chile.—A severe earthquake shook Southern Chile and was particularly devastating at Chillan and Concepción. Preliminary estimates gave 20,000–30,000 dead and 50,000 injured

Jan. 27 **Great Britain.**—In the East Norfolk by-election, Mr F Medlicott (National Liberal) was returned

United States.—Mr Roosevelt's Emergency Relief Bill was passed by Congress.

Canada.—A government inquiry into Nazi propaganda was instigated

Czechoslovakia.—Arrangements whereby Britain and France put £16 millions at the disposal of the Czechoslovak government were completed.

Turkey.—The Kamutay (National Assembly) voted for its own dissolution.

Jan. 28: **Great Britain.**—Important Cabinet changes were made.

Mr. Chamberlain's speech on foreign policy and national defence was broadcast throughout the Empire

Hungary.—Conscription for all Hungarians between 12 and 60 was introduced.

Jan. 29: **Germany—Poland.**—Agreement was reached on the question of Polish Jews expelled from Germany at the end of October.

France.—New decrees effected economies on road improvements and the salaries of local bodies.

India.—Mr. Subhar Chandra Bose was re-elected President of the Indian National Congress.

Jan. 30: **Australia.**—A new loan of £8,500,000 to finance public works was issued.

United States.—The Supreme Court rejected the Tennessee Valley Appeal.

Jan. 31: **Great Britain.**—Parliament reassembled.

Germany.—Three German newspapers ceased publication.

United States.—At Columbia university, New York, the uranium atom was split into two parts, each with an energy of 100 million electron volts.

The sale of American aircraft to France, and Mr. Roosevelt's "departure from neutrality" were strongly criticized by Republican leaders.

Soviet Union.—An outline of the Third Five-Year Plan was published in Moscow by M. Molotov.

A

ABERCROMBIE, LASCELLES, English poet and critic, was born at Ashton-upon-Mersey, Cheshire, on Jan. 9, 1881, and died in London on Oct 27, 1938. A brief notice of his life and work may be found in the *Ency. Brit.*, vol. 1, p. 35 In 1935 Dr. Abercrombie was appointed Goldsmiths' Reader in English at Oxford University. His later publications included. *Twelve Idylls*, 1928; *Progress in Literature*, 1929; the British Academy Shakespeare Lecture, *Liberty of Interpreting*, 1930; *The Sale of St. Thomas*, 1931; and *Poetry—its Music and Meaning*, 1932. His *Collected Poems* were published in the Oxford Poets in 1930.

ABYSSINIA: *see* ITALIAN EAST AFRICA.

ACCIDENT AND MISCELLANEOUS INSURANCE. Those sections of insurance business which are included under the heading of accident and miscellaneous are all of fairly recent origin, having developed out of certain modern trends. Such important sections of insurance as motor, third party, burglary, and workmen's compensation have all been originated within a period of fifty years or so. For this reason these sections are still in process of expansion, and each year sees an advance in the volume of business accepted by insurance companies in practically every country of the world. As an example, the premiums written by British offices with their world-wide connexions, in each of the principal sections of accident business, are given as follows:

	1937	1936
Motor . . .	£37,318,352	£35,210,019
Employers' Liability . .	8,716,804	7,666,665
Personal Accident .	3,777,495	3,541,214
Miscellaneous . .	26,894,292	25,068,493

These figures may be taken as illustrating the general trend of the business throughout the world. The motor section maintains its place at the head of the department. The figures of British offices include business written abroad, where those offices have substantial interests. The aggregate foreign business is, however, much larger, and the turnover of premium in the United States alone reaches very high figures, especially in regard to motor insurance.

The general experience of accident business has not been particularly favourable, largely because of the increasing pressure of the claims ratio in motor business. In the United Kingdom, motor claims continue to increase both in number and in average cost. The expected effect of the House of Lords decision in Rose *v.* Ford has been fully realized, and many costly claims have been received from dependants in respect of loss of expectation of life in consequence of fatal accidents. There have been various decisions in the courts on this point, and much difficulty has been experienced by judges in determining a guiding principle for assessing damages in such cases. In spite of such difficulties, however, the 1937 accident results of British offices, as reported during 1938, showed profit margins on the aggregate figures. Thus in motor business the earned profit was 1·7 per cent, in personal accident business 5·3 per cent, and in miscellaneous business ten per cent, so that the meagre results of the motor section were compensated by good returns from the miscellaneous section. This latter includes many small branches of insurance, which, though not large in themselves, combine to make up an increasingly important section of the business. Amongst them is aviation insurance, which presumably has a great future before it, but which at present is affected by the uncertainty attaching to a business in its early years. During the year 1938 a number of air disasters occurred which certainly must have thrown serious burdens on this class of insurance The business is largely transacted by substantial groups of offices, or by the sharing of risks through pooling arrangements. This has the effect of subdividing the business amongst a number of different interests, thereby limiting the cost of claims to each individual office. This system has much in its favour in a class of insurance which possesses an inherent risk of catastrophe.

Some branches of accident insurance have been made compulsory by law. Thus in many countries third-party motor insurance must be effected before a car can be used. The number of countries imposing such a law increases every year, and the system is likely to become universal. In Great Britain compulsory insurance is also required in connexion with the use of aircraft and to a limited extent in regard to workmen's compensation. The whole subject of compulsory insurance has been recently considered by a departmental committee, who submitted a report in July 1937. The suggestions made were drawn up after an exhaustive examination of the subject, but no radical extension of the principle of compulsory insurance is recommended. In the King's speech at the opening of parliament in Nov. 1938 reference was made to an intention to introduce a Bill to amend the law relating to the carrying on of the business of insurance. At the time of writing the text of this Bill is not available, but it will presumably amend the Assurance Companies Act 1909 somewhat on the lines laid down by the Clauson committee in 1927 and embodied in the then proposed Insurance Undertakings Bill. Any new Act will no doubt apply to all classes of insurance business, but it will be of particular interest in the accident department, because it may be expected to bring within its purview all those many sections which were excluded from the Act of 1909, while at the same time there is likely to be some provision as to the range and extent of compulsory insurance.

(C. E. G.)

United States. How important casualty insurance has become may be gathered from a glance at some of the statistics covering this field. The accident and health premiums written by both stock and mutual companies for the year 1937 totalled $147,510,757. The stock companies as a whole showed a larger percentage increase than did the mutuals.

The motor-car liability insurance premiums for 1937 totalled $246 millions and accounted for approximately eighty per cent of premium income in liability insurance in 1937.

The underwriting profit on all accident and health insurance for the year 1937 was $11,364,904, or 7·8 per cent of earned premiums. A fairly substantial profit was earned

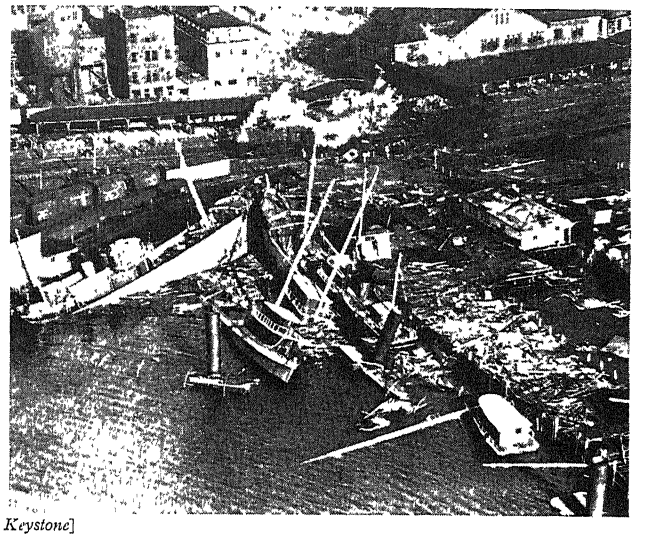
on all lines of motor-car insurance except collision, on which there was a loss of $1,114,902.

ACCIDENTS AND DISASTERS took a heavy toll during 1938 on land, at sea, and in the air. The worst aviation disaster occurred in July at Bogota, Colombia, when a stunting military aeroplane crashed into a stand, killing 50 people. At Tokyo on Aug 24, 28 died and 130 were injured after two planes collided and set fire to an iron foundry. Twenty perished in an Italian air-liner off Sardinia on July 14, and a similar number on Oct. 10 in a Belgian air-liner disaster in Germany. Nineteen were killed when an Italian air-liner, whose passengers included guests returning from King Zog's wedding in Tirana, crashed 80 miles from Rome on April 30. Eighteen were lost in a crash on Mount Dandenong, Australia, on Oct. 25, and 16 in a Czech passenger plane in Germany on Aug 15 Other major disasters included 14 deaths in an Italian air-liner crash at Varese on Aug. 18, 14 in the Jersey Airways crash at St. Helier on Nov. 4, 13 in a German air-liner near Splugen Pass in Switzerland on Oct 1, 12 in a Hungarian passenger plane which fell near Debreczen on Aug 10, and 10 (including 9 civilians) when an R A.F. plane crashed on a house near London on Sept. 4. In the Pacific, the " Samoa Clipper " was lost on Jan. 11, with 6 lives, and the " Hawaii Clipper " on July 29, with 15. A crash in Montana, U S.A , on Jan. 10, caused 10 casualties ; another on May 24 in Ohio, another 10, while in a crash in Mexico on Aug. 12, 11 were killed. Near Bathurst, Gambia, a German transport plane failed on an experimental flight on Nov. 26, and 11 perished. The Soviet airship V6 was destroyed in Northern Russia on Feb. 6, with 13 on board.

Road and railway accidents were numerous, a particularly distressing one being the death of 25 children and a driver in a collision between a school bus and a train on Dec. 1, near Salt Lake City, U.S A. The worst railway accident occurred, however, in Rumania on Dec. 24, in a collision in which 100 were killed and 300 injured. Brazil and Jamaica both suffered serious accidents, the former on Dec 19, with 90 fatalities ; the latter on July 30, with 52. Similar disasters occurred in Montana, U.S A. on June 19 with a roll of 47 dead ; near Mexico City on Dec. 21 (40 killed) , in Nova Scotia, on Dec. 6 (21 deaths) ; near Udine, Italy, on Nov. 23 (20 deaths) ; and in India, between Madura and Trichinopoly, on Aug. 21 (20 killed, 100 injured). In Britain, there was an underground railway smash in London, on March 17, when 6 were killed and 60 injured.

Disasters at sea were numerous. In January the Grimsby trawler " Leicestershire " with 15 hands, and the Fleetwood boat, " Bostonian," with 12 hands, were both lost. In September the Hull trawler " San Sebastian " was wrecked near Spitzbergen with a loss of 15 lives. On Aug. 7 the Lowestoft trawler " Alcazar " sank in the Irish Sea after a collision in which 7 were drowned, while in a collision between the German " La Plata " and the Greek ship " Akti " in the Bay of Biscay on Dec. 5, 17 went down. Twenty-eight sailors were drowned in a storm off the Anatolian coast on Sept. 22 ; 30 when a ferryboat sank near Lisbon on Dec. 19, and 8 when a ferryboat capsized at Sydney, on Feb. 4. An explosion on the Italian cruiser " Quarta " near Majorca on Aug. 18 killed 15 sailors ; fire destroyed the " Italian Prince " off Cape Finisterre on Sept 6.

The most spectacular fire broke out in Marseilles on Oct. 28, destroying part of the famous Canebière and causing 75 deaths ; but the worst casualties were in the burning of Changsa in China, when 2,000 perished. At Atlanta, Georgia, 34 died in a hotel fire on May 16 ; in Quebec on Jan. 18, 17 students and teachers were suffocated in a fire at the College of the Sacred Heart , and at Coimbra, Portugal, 14 boys perished on July 6, in an exhibition of fire-fighting. Brush and forest fires were responsible for much damage in Vancouver, B.C., Ontario, Minnesota, and Southern California. Two major coal-mine explosions occurred, the Markham Colliery disaster in England on May 10 with 79 fatalities, and one in Virginia, U.S.A., on April 23 with 54. Explosions in munitions factories occurred at Ardeer, Scotland (6 deaths), on Jan. 27, at Segni, near Rome (15 dead, 200 injured), on Jan. 29, at Cordelio, Greece, on Nov. 18, virtually demolishing the town ; and at Hospitalet, Spain, on Nov. 18, killing about 400 persons.



Keystone]
THE WATERFRONT AT NEW LONDON, CONN., AFTER IT HAD BEEN STRUCK BY A HURRICANE, SEPT. 28, 1938

Tornadoes, hurricanes, and floods wrought much havoc. They were particularly devastating in Turkey, in various parts of the United States, where, in the north-eastern states 682 persons were killed in the September hurricanes, and in China (*see* IRRIGATION AND FLOOD CONTROL), while Japan and the Philippine Islands suffered from violent typhoons. Earthquakes were severe in Central Anatolia, Turkey, in April, when more than 300 lives were lost, and again in December. On June 11 the first earthquake tremor for 50 years was felt in north-western Europe. A series of mountain avalanches overwhelmed more than 200 persons at St Lucia, B.W.I , on Nov 22, and on Dec 24 an avalanche in Japan caused heavy casualties.

Among well-known people accidentally killed during the year were : Lord and Lady Plunket ; the Count of Covadonga, King Alphonso's eldest son ; Col. Valeri Chkaloff, Soviet's famous long-distance aviator , Lt.-Col. Ramon Franco, brother of General Franco ; Mr. C. F. M. Swynnerton and Dr. B. D. Burrit, government scientists in Tanganyika ; James Williams (Nilaud), world's champion parachutist. (E. D. E.)

ADEN. Aerial operations against raiding tribes in the Aden protectorate were carried out by the R.A.F. Aden command on several occasions during 1938, the raiders giving guarantees of future good behaviour and stolen property being returned. A dispute with the Imam of Yemen, which had threatened communications between the two countries, was successfully settled in September. Much thought was given to preparations for Aden's centenary as a British possession, which fell on Jan. 19, 1939. It was decided to commemorate the date by the establishment of an infant welfare centre and the introduction of a

permanent system of poor relief. Towards the inauguration of these schemes £6,000 was subscribed in Aden itself.

Area and Population :
Aden Colony, including Perim Is., etc , Area 80 sq miles, population (1931) 46,638
Aden Protectorate, including Socotra, Area 112,200 sq. miles; population (estimated) 600,000.
Governor : Lt -Col Sir Bernard Rawdon Reilly, K C.M.G
Language. Arabic.
Religion. Mohammedan.
Production :
Tobacco (in the Protectorate) . Annual Value, approx Rs. 500,000
Salt . production (1936) 355,115 tons; export (1936–37) 322,837 tons.
Overseas Trade (1936–37) :

Imports	£5,330,016
Exports	£3,115,964

Finance and Banking :

Revenue (1938–39) .	Rs. 18,90,000
Expenditure (1938–39) .	Rs 17,43,000

Currency. Rupee (Rs 1 = 1*s* 6*d*.)
Motor Vehicles Licensed (Dec. 31, 1936): 521 cars and taxis, 122 commercial vehicles.

ADENOIDS : *see* EAR, NOSE, AND THROAT, DISEASES OF

ADULT EDUCATION. The "Challenge to Democracy" during 1938 stimulated and increased the work of Adult Education in many countries, notably in the British Dominions, the United States, and Scandinavia The efforts have varied greatly in method and content, in accordance with the conditions and environment of the diversified interests of the peoples concerned.

In England and Wales the universities are reinforced by financial grants from the Board of Education and many local education authorities. Requests for classes are usually made by voluntary bodies which organize them, notably by the Workers' Educational Association, which in co-operation with universities inspired and created the "Three-year University Tutorial Class", of which there were 771 in 1937. These classes must, in accordance with the regulations, make "the standard of university work in honours a possible aim. The course must be planned to reach that standard within the limits of the subject".

On April 27, 1938, the Board of Education issued a revised draft of "Adult Education Regulations" for such universities and approved bodies, other than local education authorities, which desire grant-aid for their classes. All universities and university colleges in England and Wales were at work in 1938 under these regulations. The university authorities are 21 in number, and there are eight other recognized bodies of a non-university character. The universities of Scotland and Northern Ireland come under other administration.

The provision for Adult Education in evening institutes and classes maintained by local education authorities is made under "Regulations for Further Education". During the year ending July 31, 1937, there were 3,011 recognized groups or classes; of these, 1,523 were university extra-mural and 1,169 were under the auspices of the Workers' Educational Association. They were almost entirely "humanistic" in content.

An important agreement between university extra-mural authorities was reached in 1938, providing for joint action in arranging for lecture courses. As a result, distribution of such courses should be more uniform and their number increased. In 1937, 404 such courses earned Board of Education grants.

The latest reports from the Dominions reveal that there were 124 tutorial classes in Australia, seventy in New Zealand, 54 in Canada, and four in South Africa. They are not all, however, three-year classes, and the obligations are not so rigorous as in England and Wales In addition there were numerous other class and lecture courses. The subjects studied are similar to those in England : literature, drama, and economics being prominent among them.

Much activity has been noticeable in India. For example, an advisory committee appointed in Jan. 1938 by the government of Bombay, published a report which not only deals with methods of organization, but makes important recommendations concerning many aspects of Adult Education.

In the United States there is taking place what may roughly be termed a mass movement towards Adult Education. Almost every known form may be discovered in one State or another Universities and colleges vary greatly in their extra-mural activities. The forum method —a series of lectures on subjects of topical interest followed by organized and sometimes broadcast discussion—has been adopted increasingly.

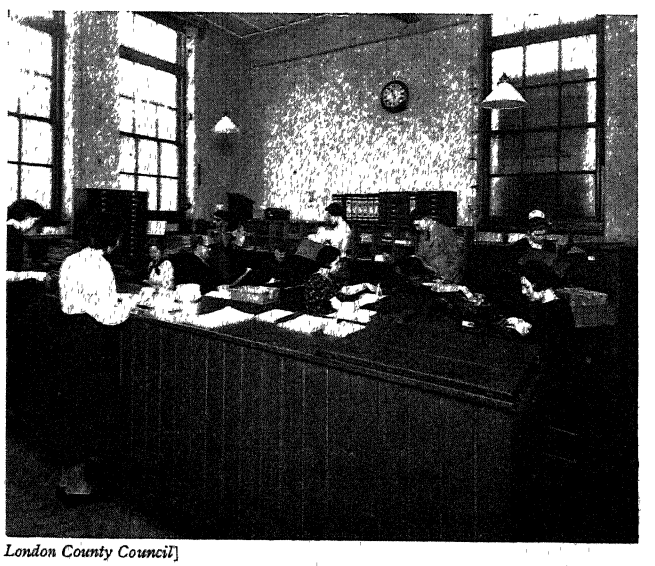
Educational trusts, particularly the Carnegie Corporation of New York, have assisted, not only in the States, but in the British Dominions, particularly through book provision and travelling bursaries. Canada has benefited greatly. Grants have been made by the Carnegie Corporation to the Canadian Association, and to such forward movements as the provision of a rural library system in Prince Edward Island, and the notable extra-mural work among fishermen and agriculturists of Antigonish (Nova Scotia) University.

A special department of Adult Education has been created in Newfoundland. The first summer school for adult women students was held in 1938.

Music and drama schools are on the increase in England as elsewhere. There has been no addition to the nine residential colleges for adult students in Great Britain, of which Newbattle, near Edinburgh (1937), is the most recently created. Non-residential educational settlements in Great Britain now number 29; that at Pontypridd was opened in 1938.

The Workers' Educational Associations in Denmark and Sweden, the study circle movement in Sweden, and the Seafarers' Education Service of Norway, have all developed during the year. At Pontigney Abbey in France there have been conferences and schools specializing in Adult Education.

Larger numbers of essential books have been accessible to adult students generally. The National Central Library issued 12,648 such books to English classes, and the



London County Council]
OFFICE TRAINING IN A COMMERCIAL INSTITUTE

National Library of Wales 10,889 to Welsh classes. The Public Library authorities in Great Britain and the Dominions have also increased their special provision

Much has not been touched upon, even in England itself: for instance, the work of the College of the Sea, of sectional movements such as the Co-operative, with its College and classes; the Church Tutorial Class Association, and the National Council of Labour Colleges

Among the by-products of Adult Education are the increased vitality of the individual student, and a wiser approach to local, national, and international problems.

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ADVERTISING. During 1938 newspaper advertising expenditure in Great Britain decreased by about 2% as compared with 1937. The fall was about 3·2% in London morning newspapers, 10·9% in London evening newspapers, 5% in national Sunday papers, and 2·7% in provincial daily newspapers. An increase of 14% was reported for London suburban and provincial weekly papers and an increase of 5·5% for weekly and monthly magazines.

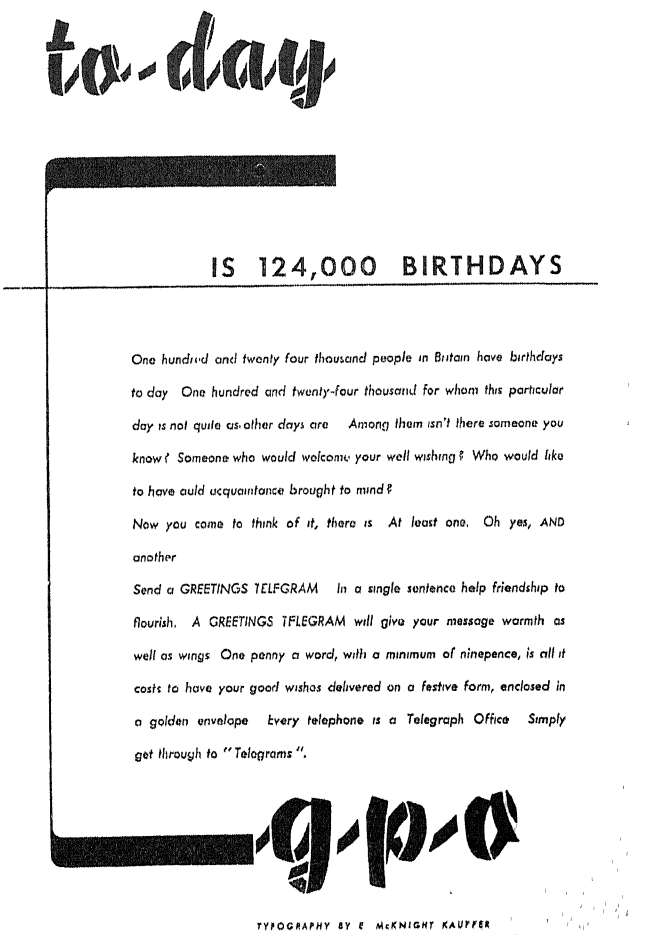
Newspapers. One outstanding feature of newspaper advertising was its increasing use by the British Government, particularly to attract recruits for the armed forces and to secure the services of the civilian population for A.R P.

A notable newspaper advertising campaign was launched by the British Medical Association during 1938. It was undertaken with a view to giving guidance on some important matters relating to public health, and although there were difficulties with certain newspapers at the start as to the precise wording of certain statements, the campaign was significant as being one of the first to be sponsored by a professional body—and that body one of which the individual members have always set their faces sternly against advertisement.

Co-operative advertising by industries continued to function on a large scale, notable among them being the milk industry and the brewing industry. Gas and electricity, the railways, and the London Passenger Transport Board were also responsible for large advertising expenditures.

Copy and Layout. The influence of American technique still remained apparent in the wide use of strip-cartoon advertising—a series of small pictures with appropriate wording designed to tell the advertising story graphically and vividly. Humour continued to be a feature of much British advertising. In Britain national campaigns are designed very largely for newspapers (as compared with magazines in America) because it is calculated that eight London morning newspapers now reach between them approximately 75 % of all families.

Posters. The chief development in poster advertising was the growing recognition amongst industrial firms that posters displayed in rural surroundings are not only æsthetically undesirable but are also bad business on the part of the advertiser. In large towns, on the other hand, posters can well be held to add to the amenities of life, especially when they are carefully kept and displayed on the type of well-designed and neatly panelled hoarding which became increasingly noticeable during 1938. In the building of new railway stations the design included specially planned spaces for the display of posters in an orderly and attractive way.



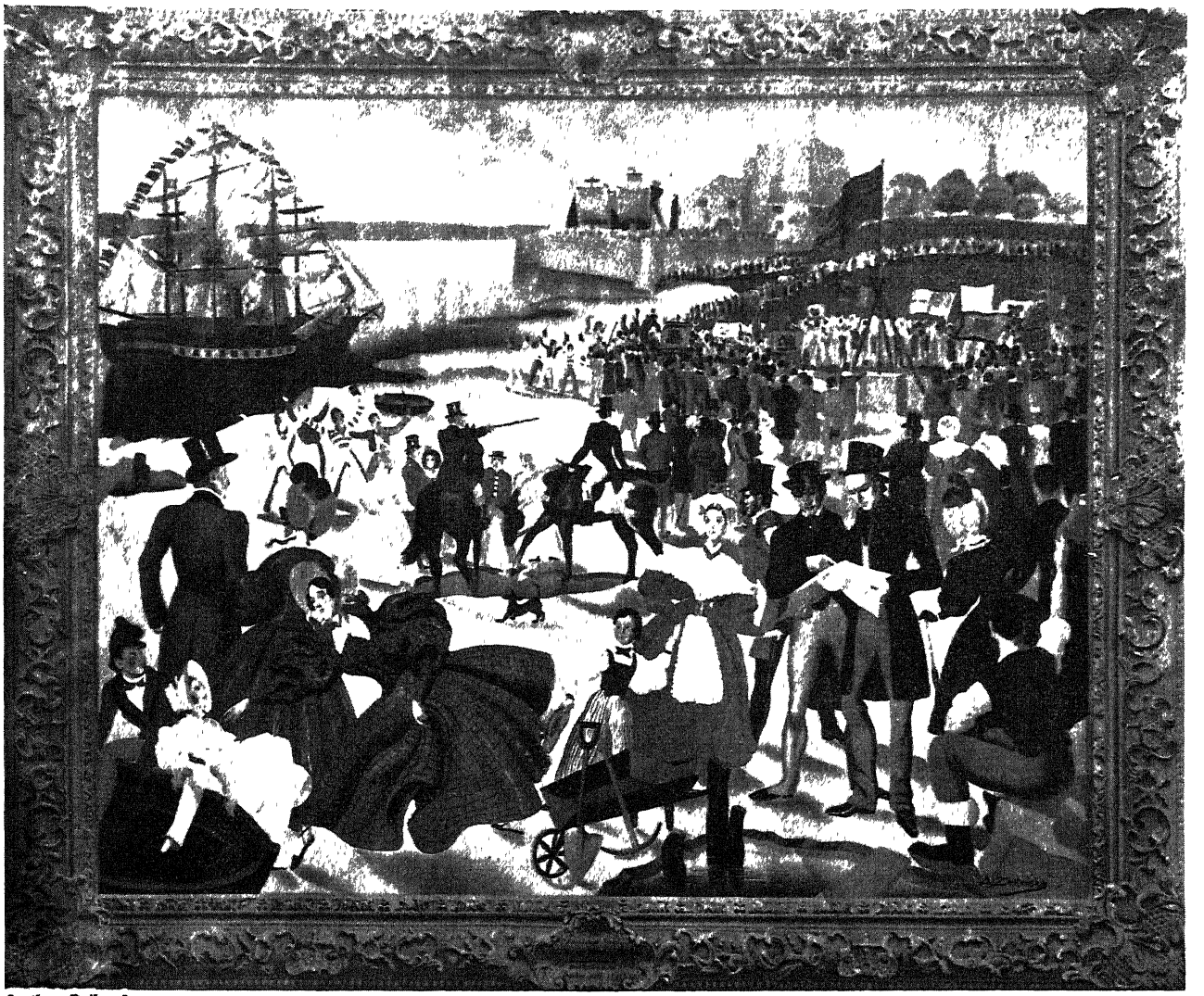
TYPOGRAPHICAL ADVERTISEMENT FOR THE G.P O., DESIGNED BY E MCKNIGHT KAUFFER, FOR MATHER & CROWTHER LTD.

Radio. Radio advertising is not permitted in Great Britain, but more British advertisers used the facilities offered by Continental broadcasting stations There was a marked tendency to produce more elaborate programmes, with higher entertainment-value and less concentration on the actual advertising message Many of the leading stage, film, and radio stars were engaged, and the audiences consequently increased, especially on Sundays. Negotiations took place on the withdrawal of these commercial radio broadcasts from the Continent, but no definite results were reported.

Films. Advertising films reflected the improved technique of film production as a whole in Great Britain. There is still some feeling that cinema audiences should not be expected to favour their display, but many advertising films of the year were so well produced as to be received with pleasure and recognized as providing an invaluable means of illustrating a complicated process, such as that of the manufacture of a motor-car.

Aeroplanes. In suitable weather, advertising by means of streamers attached to aeroplanes is frequently used. One of advertising's lighter moments occurred during a match at Lord's cricket ground. Bradman was batting for the Australians and was hit by a fast ball on the foot. At that very moment an aeroplane flew over the ground, recommending the use of a certain preparation " for tired feet ". Seldom can the word and the moment have synchronized so happily.

Research. The year showed that ever added attention is being paid to research, both as to the possible markets and



Southern Railway]

SOUTHERN RAILWAY POSTER FOR THE SOUTHAMPTON DOCKS CENTENARY, FROM THE PAINTING BY ANNA ZINKEISEN, SHOWING THE FOUNDATION-STONE LAYING OF THE FIRST DOCK, OCT. 12, 1838

the purchasing habits of the population and as to the quality and quantity of newspaper and magazine circulations. There was also a growing tendency on the part of publications to supply their advertisers with reliable facts and figures on the income, living conditions, and habits of their readers.

Legislation. There were no notable developments in 1938 in legislation as it might affect advertising, with the exception of the introduction of a bill designed to control more effectively the advertising and sale of patent medicines.

Advertising in America. In the United States, network radio advertising increased by about 1 % over 1937. Newspaper linage decreased by 14%, magazine by 22%, agricultural journal by 14%, and outdoor advertising by 1%. The net total result shows a decrease during the year of about 14%.

Newspapers and Magazines. Rotogravure and coloured advertising increased in 1938, appearing on news pages as well as in feature sections. Advertising was used more extensively to convey information about companies and industries to stockholders, employees, and the public generally. A leading commercial bank published the series of advertisements which was considered to contribute most towards the advancement of advertising as a social force. The purpose of this campaign was to refute anti-business propaganda and to remind newspaper readers of basic economic truths through simple, self-explanatory facts and figures.

Copy and Layout. Legislation encouraged factual rather than emotional appeal. Prices and values received greater emphasis. The tendency was to combine information with entertainment. Industrial copy became less blatant, more temperate and rational. Photographic reproduction was more authentic and a greater variety of subjects was considered suitable for photographic treatment. Cartoons remained popular and humour was used extensively, even in the advertising of products not intrinsically humorous. Many advertisements were designed to resemble adjacent items of news.

Posters. The Traffic Audit Bureau compiled annual statistics for about two-thirds of the standard outdoor poster hoardings in the United States, showing the number of persons passing each site. Greater variations in colour were seen on painted signs, and animated displays were used to create the illusion of movement.

Radio. The joint committee on radio research studied methods of determining the areas in which the advertising programmes of individual broadcasting stations were best heard. Advertising appeals were more closely associated with the entertainment features of the programme, and transcriptions were more generally used. Television is technically feasible for the purposes of advertising, but it is not likely to become an immediate practical proposition.

Research. Specialized research organizations, publications, and advertisers increased their activities in an effort to assure maximum returns for expenditure. Research studies yielded more reliable results, reflecting improved technique and more experienced personnel. Advance testing of advertisements before they are published is making possible substantial savings for many advertisers, and selected audiences were invited to register opinions on proposed radio programmes.

Legislation. The Wheeler-Lea Act, 1938, prohibits any advertising or merchandising practice which is unfair to a competitor, a consumer, or the general public. It makes it unnecessary to prove injury to a competitor; it is enough to show that the advertisement is misleading in a material respect. Both civil and criminal penalties are provided. The Food, Drug and Cosmetics Act supplements the Wheeler-Lea Act by prohibiting misrepresentation of foods, drugs, or cosmetics and the use of harmful ingredients.

The United States Supreme Court upheld a State law taxing income derived from the sale of advertising space. In another decision, the Court ruled that a local statute regarding the distribution of advertising material was unconstitutional because it violated the freedom of the press. The Department of Justice, late in 1938, announced that its investigation of monopoly practice would determine whether advertising creates a monopoly by taking unfair advantage of competitors.

Co-operative Advertising increased in volume. The motion picture industry undertook one of the outstanding campaigns, with advertising appearing in practically every daily newspaper and a contest offering $250,000 in cash prizes. States, counties, and communities advertised to promote tourist trade and attract new industries.

Competitions and Premiums. Competitions remained popular among national advertisers, with prizes distributed both to consumers and retailers. Prizes included cash, life insurance annuities, cars, furs, refrigerators, radio sets, silverware, and blankets. The National Retail Dry Goods Association urged manufacturers to restrict prizes to their own products, on the ground that retail stores are reluctant to push the sale of articles freely given as prizes. The increasing number of prizes offered was partly the result of an effort to offset declining sales volume and most advertisers required competitors to submit coupons or other evidence that merchandise had been purchased, together with a small cash payment. (G. E. L.) (D St.)

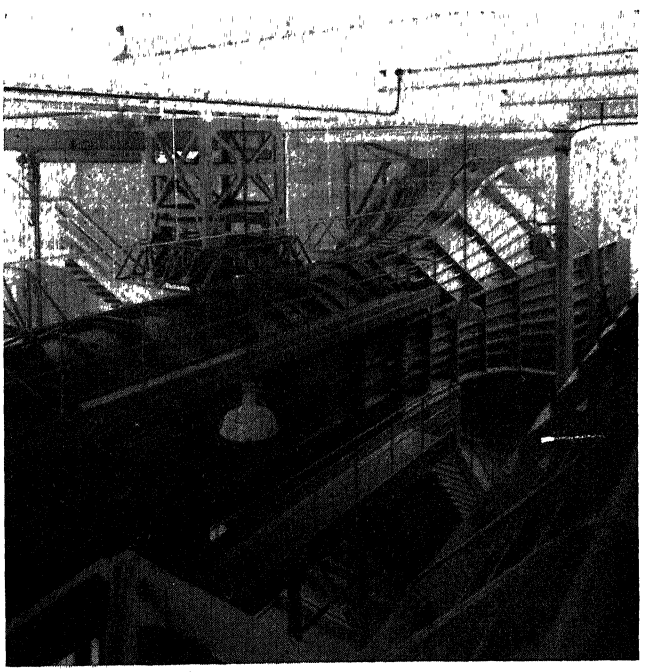
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AEGEAN ISLANDS, ITALIAN. Juridical changes were carried out by governor's decree in the Aegean Islands during November. The jurisdiction of special courts for Mohammedans, Jews, and Christians of the Orthodox Church was restricted to questions of cult. All other matters have by the new decree to be submitted to ordinary civil law courts, all notarial services must, according to the laws prevailing in continental Italy, be derived from the State and not from the religious communities. A further order created municipal registration offices to which all the inhabitants must report themselves as in Italy. These measures bring legislation in the Aegean possessions into line with Italy proper; reduce the functions of the religious communities; and strengthen the administrative hand of the government over this strategic area of the Eastern Mediterranean. (I. S. Mu)

Area and Population:
Area 960 sq. miles.
Population (est. Dec 31, 1936) 141,000.
Chief Towns: Rhodes (27,466), Calino (15,247).
Governor. Count de Vecchi.
Production:
Olive oil (1937) . . . . 1,100 metric tons
Wine (1936) . . . . . 25,000 hectolitres
Overseas Trade 1937:
Imports . . . . . 122,374,000 lire
Exports . . . . . 19,705,000 ,,
Roads: motor (Dec. 31, 1937), 372 miles (279 miles in Rhodes).
Education 1937–38:
Elementary: schools, 105; scholars, 12,569.
Secondary: ,, 8; ,, 865.

AERONAUTICS. New methods of calculation and experiment characterized aeronautics during 1938. In the difficult theory of the science, no sooner is one obstacle surmounted than further development of flying makes others appear. Direct tests on scale models in wind tunnels, on the other hand, require sweeping correction before application to aircraft.

A large tunnel (its 145-m.p.h. working stream has an elliptical section measuring fourteen ft. by ten ft. and the aerodynamic forces may exceed one ton weight) has been erected by The Fairey Aviation Co. (*see* illustration), whilst a rather similar installation is also under construction at the National Physical Laboratory (N.P.L.). These tunnels accommodate sufficiently large models to include details which are usually omitted from tests. As an example of the importance of such refinement, the centre of pressure of a model twin-engined monoplane was found to be displaced by some three per cent of the total length when model airscrews were working in position. However, the change to much larger Reynolds numbers in the turbulence-free atmosphere still remains to be negotiated.



Fairey Aviation Company]

A LARGE WIND TUNNEL. IN THE BACKGROUND IS THE CONTRACTING FLAIR SPEEDING AIR INTO THE WORKING SECTION, ABOVE WHICH IS THE FRAMEWORK OF THE AERODYNAMIC BALANCE, WHOSE WEIGHING BEAMS ARE IN AN UPPER ROOM. PART OF THE RETURN DUCT, 18 FT. MEAN DIAMETER, IS SEEN TO THE RIGHT

An outstanding problem in this connexion has been solved approximately at the Royal Aircraft Establishment (R.A.E), *viz.* the "form drag" of wings. Experiments in the compressed-air tunnel at the N.P.L. provided a valuable check on knowledge of flat-plate skin friction up to the largest Reynolds numbers of flight, but also verified that, on calculating from this knowledge the skin friction of wings and duly allowing for the resistance necessarily associated with lift, an important form drag remained. Aeroplane designers have long recognized the effect; they are now able to make more reliable numerical estimates Extension of the theory to the case of streamline bodies is possible, partly by virtue of recent work in Japan on the boundary layer of a sphere.

Both form drag and skin friction depend upon the positions round the contour at which the laminar flow in the forward part of the thin boundary layer of viscous effects becomes turbulent These "transition points", the subject of experiments in flight at Cambridge and the R.A.E., may occur at more than one-third of the chord (*i e.* width) of a wing from its nose, but they are moved forward disadvantageously by roughness of surface or propeller disturbances. Can transition points on aircraft in flight be predicted from tests on models in wind tunnels? The answer may be obtained at the N.P.L. from a new seven-ft. tunnel whose specially long settling chamber and working section should render its stream exceptionally steady. Inserting graded grids will make possible the study at fair scale of definite degrees of small turbulence.

A new method of calculating *a priori* the skin friction and lift for the lower Reynolds numbers at which breakaway occurs before turbulence sets in has been evolved at Queen Mary College, London. This depends essentially upon introducing the wake analytically. Assuming any reasonable wake-thickness is shown to remove at once the discordance formerly existing between theory and experiment, stalling can be forecast with some accuracy. Simple formulæ result for calculating the positions of breakaway approximately. The theory is being applied to the new families of conformally transformed wing shapes, which have been somewhat simplified.

Work in Germany has included great improvement of the smoke tunnel, which, in conjunction with the slow-motion camera, now provides ready insight into flow phenomena beyond our means of calculation. General analysis of airscrews has indicated peak efficiency at aircraft speeds of about 350 m.p.h. Serious losses are expected at 400–450 m p.h., due essentially to spin of the slipstream, which it is proposed to obviate by using tandem airscrews rotating in opposite directions.

Increasingly high speeds, as also high-altitude flying near the stratosphere, where sound travels twelve per cent more slowly and shock waves are proportionately more liable to form, have emphasized the need for detailed study of compressible flow. Very fast wind tunnels are being installed at the N.P.L. and R.A.E., the former measuring twenty in. by eight in. in section and being fed from a 5,000-cu. ft. reservoir pumped up to some 25 atmospheres pressure, to investigate effects of shape (the circular cylinder generates shock waves at only forty per cent of the speed of sound, a thin aerofoil at over eighty per cent). An interesting addition to the technique required has been developed from the warming effect of skin friction. This heating is unequally distributed round an aerofoil, but use of non-conducting materials enables it to be determined at any point on the contour as a continuous function of the speed, under normal conditions. If a shock wave forms at that point the local heating suddenly becomes more intense. The phenomenon may provide liaison between model and full-scale research, for thermocouples may presumably be embedded for observation in parts of aircraft suspected of requiring re-shaping from this viewpoint. Two papers on the theoretical side, from the Langley Memorial Aeronautical Laboratory, U.S.A., include calculations by Poggi's method of the effects of compressibility on the lift and moment of two Joukowski sections.

High speeds breed fear of flutter, and some direct test is desirable to determine whether it can arise in given circumstances or not. Some experiments on this dangerous phenomenon have proceeded in a novel way, variation of the permeability of nickel through change of stress being utilized to obtain, by the cathode-ray method, photographic records of the forces on a rapidly oscillating aerofoil.

Details are lacking of further experiments in the interesting U.S.A. tunnel whose axis can be so inclined to the horizon as to permit a properly weighted model aeroplane to fly (free from mechanical support) against a stream directed slightly upwards. The control surfaces of the model can be operated electrically from outside the tunnel, providing a direct demonstration of stability and controllability. The same end is being approached in Great Britain by experiments of a different kind, the stream remaining horizontal while the weight of the model is supported by a vertical rod pivoting in a cup below the tunnel. Difficulties already appear to be overcome in the case of lateral stability. (*See* also AVIATION, CIVIL; AIRPORTS; AIR RACES AND RECORDS). (N. A. V. P.)

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AFGHANISTAN. Undisturbed even by the unrest in Waziristan, Afghanistan has enjoyed another year of unwonted peace, and is making rapid strides towards western civilization. Roads are being laid out for motor traffic; industries, based originally on military requirements, are being developed; and education is spreading. There are three colleges in Kabul, and schools are being set up everywhere. Mahommed Zahir Shah continues to rule, with a Council of Ministers, a nominated Senate, and an elected Assembly. (ME.)

Area and Population:
Area 250,000 sq. miles.
Population (est. 1937) 7,000,000.
Chief Towns: Kabul (80,000), Kandahar (60,000), Herat (30,000).

Ruler: Mahommed Zahir Shah.

Languages. Persian, Pushtu.

Religion. Mohammedan.

Production: Wheat, rice, millet, maize, sheep.
Wool (1936), 6,800 metric tons.

Overseas Trade 1937–38:

Imports from India	. .	Rs. (Indian) 60,85,070
Exports to India	. .	Rs. (Indian) 3,70,61,247

Roads, Trade routes: Kabul to Peshawar (India) 210 miles.
" " " : Kandahar to Chaman, 70 miles.
" unmetalled, connect chief towns.

Finance:
Revenue and Expenditure *c.* Rs. (Afghani) 150,000,000
Currency: Rs. 3·65 (Afghani) = Rs. 1 (India) = 5*d.* approx.

Education. Confined chiefly to Kabul.

Army. Compulsory service; peace strength 60,000.

AGRICULTURE. British farming suffered a considerable setback in 1938 as the collapse of world commodity prices made itself felt on the British market. Fortunately several home-produced foodstuffs enjoy guaranteed prices; fortunately, also, the harvest of 1938 proved particularly good.

The acreage under each of the principal cereals increased substantially, as a result probably of the relatively favourable prices ruling in 1937. Despite a spring drought of exceptional duration and a sunless July which retarded ripening, all the corn crops yielded better than last year and better than the ten-year average The wheat yield in England was the highest ever recorded. Comparative acreages and yields of the principal British cereal crops in recent years appear in the following table:

	Wheat		Barley		Oats	
	Acreage	Yield per acre	Acreage	Yield per acre	Acreage	Yield per acre
	000 acres	bushels	000 acres	bushels	000 acres	bushels
1927–29 .	1,512	33·0	1,228	35·3	2,678	44·0
1934–36 .	1,843	33·2	905	34 6	2,230	44·0
1937 .	1,831	29·6	905	31·5	2,042	43·2
1938 .	1,923	38·3	986	40·6	2,097	47·0

The acreage under root crops recovered most of the ground lost in 1937. Sugar beet increased from 314,000 to 336,000 acres, potatoes from 590,000 to 610,000 acres, mangolds from 211,000 to 218,000 acres, only turnips and swedes showed a decline—from 762,000 to 745,000 acres. The output of sugar beets was disappointing and the sugar content low. Turnips were the one root crop to give a good yield. Hay crops were bad. Owing to the prolonged drought, there was in some districts no first cut at all. Out of just under 6 million acres of hay (meadow and clover) in Great Britain, over ¾ million acres were not cut. Conditions improved in the autumn and pastures provided abundant feed.

The numbers both of beef and dairy cattle declined slightly in 1938 as compared with 1937, but this was more than compensated for by an increase in the number of calves. Milk production, in spite of the drought, was well maintained, exceeding the 1937 output by about 9% and perhaps even the record output of 1936 (final figures not available at time of writing). Just over two-thirds of the total production was consumed as liquid milk.

The sheep population reached a post-war maximum in 1932, then fell by over two millions, and is now on the upgrade again, as is shown by the table of British livestock statistics given below:

Year	Cattle	Sheep	Pigs	Poultry
	Thousands	Thousands	Thousands	Thousands
1927–29 .	7,306	24,082	2,854	50,301
1934–36 .	7,895	24,210	3,880	71,301
1937 . .	7,909	24,712	3,882	63,703
1938 . .	7,971	25,537	3,606	63,675

There has been an increasing tendency in recent years for the animals to be slaughtered earlier—as lamb rather than as mutton. There has also been a shift from arable feeding to grass feeding of sheep in order to economize labour. The pig population which increased rapidly as a result of restriction of bacon imports, still exhibits the phenomenon of a four-year cycle. In England and Wales the year 1938 formed the second year of a downward phase, and the output of pig meat declined further On the other hand the decline in the poultry population, which has been continuous since 1934, has almost ceased, and it is not impossible that as a result of the fall in feeding-stuffs' prices, poultry numbers may increase in 1939.

Market gardening also has expanded enormously since the War, the acreage under the principal vegetables increasing by over 70%. (*See* FRUIT PRODUCTION; MARKET GARDENING.)

Prices. The upward trend of agricultural prices received a check towards the end of 1937 and the general level during 1938 was some 5% lower than in the previous year, and would have been lower still but for the subsidies The following table shows open-market prices (without subsidy) for cereals:

Year	Wheat		Barley		Oats		Potatoes 1st quality Majestics	
	per cwt.		per cwt.		per cwt.		per ton	
	s.	d.	s	d.	s.	d.	s.	d.
Dec. 1936 .	8	8	9	6	7	1	139	0*
Dec. 1937 .	8	9	10	6	8	8	131	6*
Dec. 1938 .	4	3	6	4	6	0	82	6

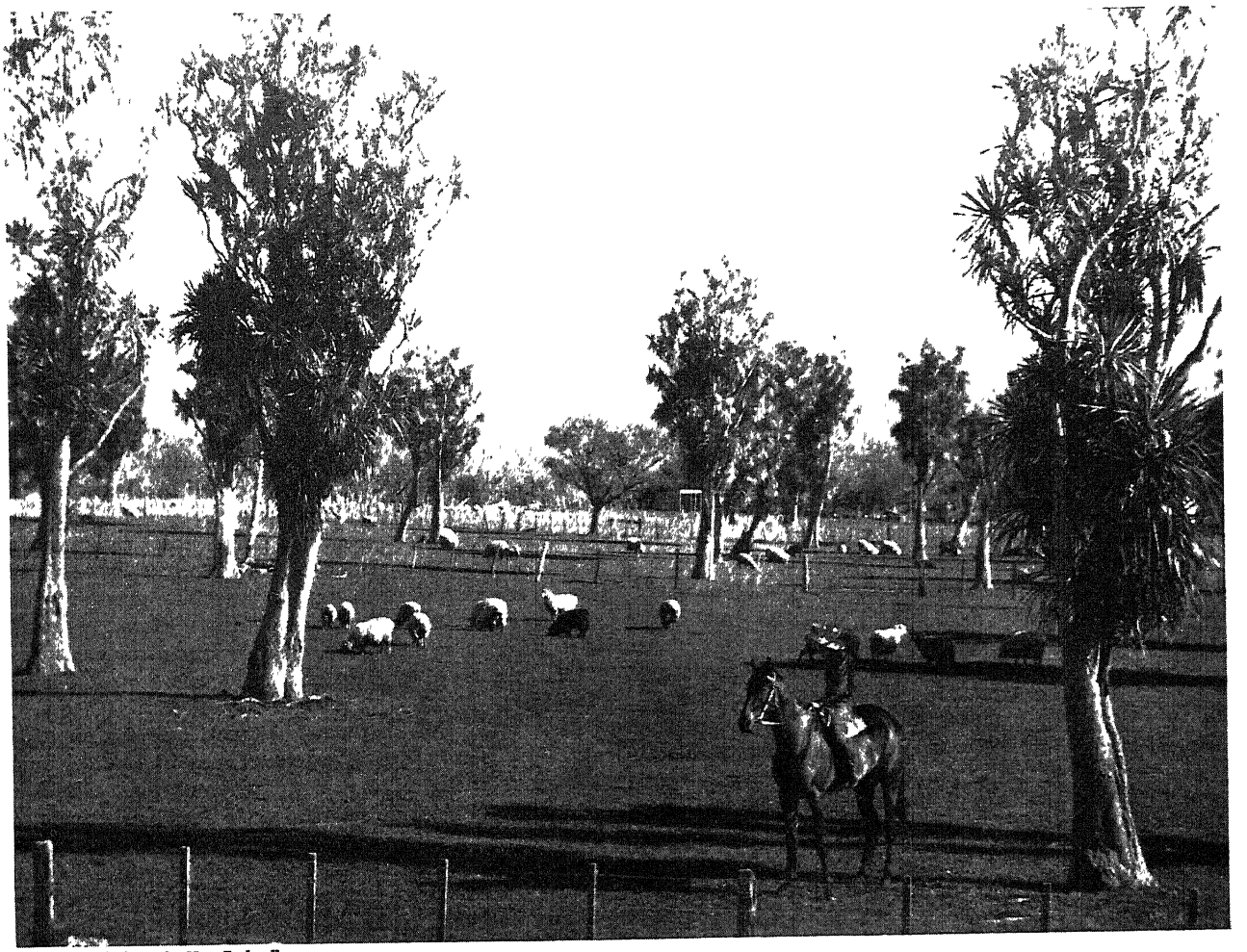
* Average for whole year.

During the crop year 1937–38 farmers received on average just under 9*s.* 11½*d.* per cwt. for their wheat, of which 1*s.* 7*d.* was subsidy; though by December the subsidy had to bridge the gap between 4*s.* 3*d.* and 9*s.* 11½*d.*, *i.e.* it had risen to 5*s.* 8½*d.* per cwt. The oats and barley subsidies are paid on an acreage basis; however the amount received in 1938 would come to some 6*s.* 9*d.* per cwt. harvested, according to the yield on any particular farm. If reckoned on the quantity *sold*, and, for instance, farmers sold half their crop, the subsidy would represent 1*s.* to 1*s.* 6*d.* per cwt. As regards sugar beet the contract price for the 1938–39 season was advanced from 43*s.* per ton (46*s.* 3*d.* at some factories) to 44*s.* 6*d.* (48*s.* 3*d.*).

In cattle markets demand was weak both for stores and for fat stock. Sheep and pigs also sold badly, as the table of stock prices below indicates:

Year	Fat Cattle 1st quality Shorthorns		Fat Sheep 1st quality Downs	Fat Pigs 1st quality Porkers	
	Per cwt. (liveweight)		Per lb. (deadweight)	Per 20 lb. (deadweight)	
	s.	d.	d.	s.	d.
Dec. 1936 .	36	8	11¾	15	4
Dec. 1937 .	44	4	11¾	16	2
Dec. 1938 .	39	10	9½	15	5

In addition to the above price for fat cattle, producers as last year received 2*s.* 6*d.* to 7*s.* 6*d.* per cwt. subsidy according to quality and to whether the animal was bred at home or in Eire. For milk the average pool price to farmers in England and Wales was about 8% higher than in 1937, partly owing to an increased price for liquid milk which the Milk Marketing Board negotiated with the distributors in the summer months. The contract prices fixed for 1938–39 closely resemble those of 1937–38.



High Commissioner for New Zealand]

ON A SHEEP STATION, GISBORNE, NEW ZEALAND

There is no index in Britain of the things which farmers buy, but the most important items for the ordinary farmer are rent, wages, feeding-stuffs, and fertilizers. About the general level of rents little is known except that it changes slowly. Agricultural wages again rose during 1938, the average per week for adult male workers being 34*s.* 6½*d.* in June. The general index for feeding-stuffs stood at 100 in Sept. 1938 compared with 114 in Sept. 1937. By the end of the year weatings had fallen to £6 12*s.* per ton (£8 15*s.* in Dec. 1937), barley meal from £9 to £7 7*s.* per ton, linseed cake (English 12%) from £10 2*s.* to £9 7*s.*, while maize meal and cotton-seed cake remained almost unchanged. The prices of the principal fertilizers varied little during the year.

Imports. Britain depends for three-fifths of her food supply on imports from abroad. During 1938 food imports totalled £408 millions as against £413 millions in 1937. Imports of grain and flour declined by £13 millions, due mainly to the immense fall in cereal prices but partly to smaller shipments of maize. Meat imports rose by £4 millions owing to an increase in the world prices of beef, bacon, and pork. Dairy produce imports were up by £9 millions, mainly reflecting an increase in supplies of butter and cheese. On the whole, between 1931 and the end of 1937 (later figures not available) total food imports declined in volume by 12%; supplies from Empire sources were 21% higher in 1937, while foreign supplies had been reduced by 32%. Several of the chief foodstuffs imported are, of course, subject to voluntary or compulsory restriction agreements.

Agricultural Development. One of the striking events of 1938 has been the launching by the Ministry of Agriculture in conjunction with other bodies of a comprehensive programme for improving the quality and health of British livestock. Of recent years there has unfortunately been no increase in the numbers of "premium" bulls and boars, *i.e.* service animals qualifying for subsidy by reaching a certain standard.

Number of premium-service animals licensed each year

	Premium Bulls	Premium Boars
1914–15	497	115
1924–25	1,069	655
1934–35	1,476	1,032
1935–36	1,469	1,029
1936–37	1,447	1,013
1937–38	1,547	1,014

Allowing the average length of service life, this total of premium animals represents less than 10% of the service bulls and boars in use. (For measures now being taken to improve the position, *see* CATTLE AND SHEEP; also PIGS AND BACON.) To improve milk production the Ministry of Agriculture is progressing rapidly with its scheme for establishing certain areas in which all cattle are free from tuberculosis; for instance, one such area will be almost

the whole of Carmarthenshire and Pembrokeshire. These areas are intended as breeding reservoirs from which healthy stock can be distributed all over the country. In the autumn, Parliament was presented with the long-awaited Milk Bill which proposed to set up a permanent milk commission and to initiate experiments in the reform of distribution. The Bill encountered opposition and is being reconsidered Another event was the reconstitution of the Pigs Marketing Scheme. (*See* MARKETING BOARDS)

Advance is also being made in improving the housing conditions of farm labourers. The Acts of 1926 and 1930 are now supplemented by an Act of 1938 which provides a subsidy of £10 a year per house for forty years, increased in certain special cases to £12 a year, for cottages erected for farm workers. It is hoped that this will enable local authorities to provide new and more hygienic accommodation at rents which agricultural workers can afford. During the year there was a further decline in the numbers of agricultural workers, the total for Great Britain being 693,840 as against 742,455 in 1937 Part of the fall may be accounted for by the fact that in 1938 June 4 occurred on Whit Saturday when the yearly and half-yearly hirings usual in parts of England and Wales normally end.

Despite the rather less favourable conditions of 1938 farmers continue to make use of the Land Fertility Scheme. In the first annual report it is stated that more than four times as much lime and more than 70% more basic slag has been applied to the land under the scheme than in preceding years. Up to Dec. 1938 over 281,000 applications had been received in the United Kingdom, covering 2,023,000 tons of lime and 541,000 tons of basic slag. The subsidy reduces the cost of lime to the farmer by 50% and of basic slag by 25%.

Land Settlement. The Land Settlement Association was brought into being early in 1935 with the object of setting up as self-supporting smallholders unemployed men with an industrial background. To-day the Association owns 25 estates comprising a total area of 11,000 acres to which, on Nov. 30, 1938, 757 men had been transferred making, with families, a total of 3,643 persons. Of the men 328 have already become self-supporting tenants and 434 are under training.

Each group of smallholdings has attached to it an Estate Service Depot, which is run on a non-profit-making basis, where tractors and other machinery and implements are kept for the use of settlers and where there is centralized any operation which best lends itself to large-scale organization. The Association is already one of the largest producers in its particular line in the British Isles. Its total sales of produce for 1937 was £228,000 and it is confidently estimated that the figures for 1938 will show an increase of some £100,000.

The cost of setting up each settler is approximately £1,800, of which £1,000 is spent on permanent assets such as land and house, £500 consists of working capital for the settler and Estate Service Depot, which is mainly recoverable, and £310 is spent on training. The average age of settlers is 39 and the average period of unemployment prior to transfer is five years.

Australia. Agricultural conditions were less favourable in 1938 than in 1937. After the economic depression Australia had ridden up to prosperity again on the back of the sheep; but in 1937–38 wool prices averaged 12½*d.* per lb. compared with 16½*d.* per lb. in the previous season, and this involved a decline in wool exports from £51 millions to £38 millions By October the price was down to 10*d.* though thereafter it recovered. The 1937 clip reached a record of 1,015 million lb., whereas the clip which finished at the end of 1938 amounted to only 950 million lb., largely as a result of the drought.

The drought has been particularly severe in New South Wales and in parts of Victoria. It affected the 1937–38 wheat crop which totalled 188 million bushels, and still more the 1938–39 crop which is expected to yield only 149 million bushels This together with the collapse of wheat prices has created an urgent problem, firstly to stabilize prices and secondly to relieve the distress of farm families in the drought-stricken areas. Accordingly an Act has been passed fixing the domestic price of wheat at 5*s.* 2*d.* per bushel f.o.r. Williamstown. The difference between this and the world price of wheat is to be met out of a tax on flour, the price of which is raised to £12 10*s.* per ton. Thus the Australian consumer is to help the distressed farmers The funds so raised are to be distributed to growers through the guaranteed price, except for £500,000 which is distributed among the states to be spent directly on transferring farmers out of marginal areas or on helping them to grow different crops. There is much discussion as to how far it is necessary permanently to evacuate some of these marginal areas where rainfall is so unreliable.

Meanwhile, the Australian livestock industry expands rapidly. During 1937–38 exports of meat and butter were substantially higher than in the previous year. Further experimental observations were made on the shipments of chilled beef to Britain with the object of improving quality. Similarly the Egg Producers' Council is to bear half the cost of some research into wastage of eggs in shipment due to microbial attacks. From Western Australia the export of fat lambs was twice as large as in 1937, and it is confidently believed that this industry could be greatly expanded in the state. A highly important study has been published during 1938 on the conditions and future prospects of animal production in Australia. It stresses the need for relating livestock production to the herbage growth in different areas and for taking steps to improve the average quality of stock. (*See* Bibliography.)

Canada. There are in Canada approximately 730,000 farms covering about 160 million acres of which 58 million acres are in field crops. The most outstanding feature of Canadian agriculture production is the wheat crop which in 1938 occupied 26 million acres from which 358 million bushels were harvested. The yield of 13·8 bushels per acre is somewhat below the long term average but almost twice that of 1937 and is the largest since 1932.

In Eastern Canada, crop conditions could hardly be described as uniformly satisfactory for all areas. Quebec experienced a drought in the growing season and Ontario had too much moisture at harvest time. According to current reports the grain crops of these two provinces were about average. The fruit crops were also average, with the exception of grapes which showed a heavy decline. A reduction in cheese production of about 12% was partly offset by some increase in the output of butter. In the Maritime Provinces the fruit crop was a fair one and vegetables rather better than average; cereal and forage crops varied with the districts but on the whole were about average or slightly poorer. In British Columbia the fruit crop was fair but somewhat smaller than in 1937. Cereals and forage crops were, generally, considerably poorer than usual. The marketings of farm livestock of

all classes in the Dominion of Canada have totalled less than those of a year ago

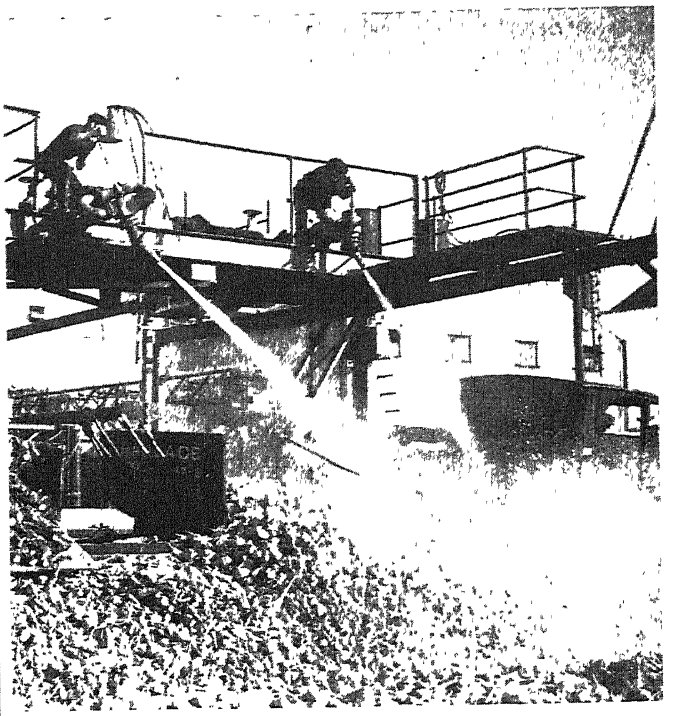
The fall in cereals prices is proving disastrous for Canada As regards wheat, Manitoba No 1 which in Dec. 1937 stood at 13*s* per cwt. at Liverpool had fallen by the end of 1938 to 6*s* 6*d*. Similarly Canadian oats fell from 9*s* 7*d*. to 6s 4d per cwt., likewise barley (No 3 Western) from 8*s* 5*d* to 6*s* per cwt. The good harvest was most welcome after a series of poor years, but its beneficial effect had been almost neutralized by the collapse of prices and consequently only a moderate degree of recovery has been possible It is true that the Grain Board since August has guaranteed farmers a price of 80 cents per bushel for their wheat, but by October the market price at Winnepeg had already fallen to 60 cents, so that this undertaking will result in a heavy deficit at the end of the season

New Zealand. During 1938 some branches of this country's agriculture fared badly while others continued to prosper. The worst hit was the wool industry, prices in 1937–38 averaging 10*d*. per lb. as against 15·8*d*. in 1936–37, so that total receipts from wool export fell from £16 millions to £9 millions. Furthermore there occurred early in the year a serious outbreak of so-called facial eczema, affecting both cattle and sheep in the North Island. The government has provided £10,000 for a comprehensive programme of research into this disease

Mutton and lamb production were well maintained, and the number slaughtered at freezing works advanced from 11·3 millions to 12·4 millions There was also an increase in the number of cattle, calves, and swine slaughtered Export meat prices ruled higher than in 1937, the index rising from 161·5 (1936–37) to 168·0 (1937–38) Butter and cheese prices were similarly higher in 1937–38 though towards the end of 1938 they weakened, butter at London falling to 109*s* per cwt in December compared with 120*s*. in the previous December. The government is planning a considerable increase in the research and advisory services for the dairy industry. Plans are complete for the inauguration of a system of farm dairy instructors of whom there are to be 77, the whole scheme costing some £47,000, of which the State will contribute 40%. A sum of £4,000 has been allocated for more extensive herd-testing for mastitis. The testing of cattle at slaughter-houses shows that still over 7% are infected with tuberculosis, though the majority only slightly, but to undertake a substantial further reduction in the incidence of tuberculosis is considered too costly at present

The drought at the end of 1937 seriously affected the wheat crop, especially in Otago and in Southland, so that much was fed off. A substantially smaller acreage was finally harvested than in 1937 though the yield per acre—over 32 bushels—was no lower. The potato crop in 1938 was the heaviest for many seasons and provided an export surplus of nearly 50,000 tons. During the year a commercial treaty was negotiated with Holland, opening a market for New Zealand fruit in exchange for accepting Dutch machinery and cigars.

South Africa. Agriculture has taken some time to recover from the severe drought at the end of 1937. The 1937–38 wheat crop was far from adequate to meet domestic requirements; prices of wheat and flour rose; the government negotiated an agreement with millers and bakers checking this, and in October the Wheat Control Board came into existence to regulate the marketing of the crop and to supervise prices. Similar Control Boards are being set up under the Marketing Act for meat, dairy produce,



The Times]
UNLOADING SUGAR BEETS AT KING'S LYNN BY MEANS OF HIGH-PRESSURE JETS OF WATER

tobacco, dried fruit, and chicory. For maize a Control Board already exists, raising a levy of 1*s*. 6*d*. per bag on all producers in order to finance exports.

In the livestock industry the most important product is wool, which accounts for more than a third of all South Africa's agricultural exports (*see* CATTLE AND SHEEP).

Dairying has expanded enormously during recent years The output of butter doubled between 1933 and 1936 and cheese output increased nearly as much. Owing to the shortage of butter experienced during the 1937 drought, the government has decided to finance the storage of an extra 1½ million lb. in the 1938–39 season. An interesting experiment has been the State-aided Milk, Butter, and Cheese Scheme At present over 300,000 children are receiving at school half a pint of milk or one ounce of cheese per day, mostly free of charge; during 1937–38 over one million lb. of cheese and nearly one and a half million gallons of milk were thus supplied. Butter is sold to the poorer sections of the community at 6*d*., 5*d*, or 4*d*. per lb, according to quality (the ordinary retail price being 1*s*. 5*d*. to 1*s*. 7*d*). During the year over two and a half million lb. of butter have been sold to 43,500 families under the scheme, which for all three products has cost the State some £225,000.

In the sphere of general agricultural development the two most important current activities are livestock improvement and the measures taken against soil erosion. Under the Livestock and Meat Industries Act, 1934, farmers can have a whole district proclaimed a "cattle improvement area" in which only approved bulls are allowed. There are already 128 such areas; out of 115,000 bulls examined 58,000 were rejected, and as soon as sufficient replacements are made the standard for approval will be rapidly raised. The subsidy for the purchase of approved bulls has been increased to a maximum of £12 10*s*. per bull and £50 per applicant.

As regards soil conservation schemes the State gives a

subsidy of 33⅓% approved for work undertaken by farmers with a maximum of £250 per dam or £500 per farm. Up to the end of August 1938 during the first five years of the scheme £468,000 worth of dams had been completed plus £75,000 worth of other erosion control works In addition there were £1,150,000 of outstanding but approved dams and works.

United States. Although an extremely large acreage had been sown to wheat, the crop harvested in 1938 proved less heavy than expected owing to attacks of rust in several districts. None the less the United States will have an exportable wheat surplus for 1938–39 of 331 million bushels as compared with 198 million bushels in 1937–38. The hay crop was better than 1937 and 20% above the five-year average.

The price of wheat (Hard Winter No. 2) at Chicago stood around 120 cents per bushel in Oct 1936, 108 cents in Oct 1937, and 68 cents in Oct 1938. During 1938 the prices of other farm products also declined considerably, and the general worsening of farmers' position can be seen from the following :

Index numbers of prices paid and received by Farmers

(Pre-war = 100)

	Prices paid, including interest and taxes.	Prices received for products.	Purchasing power of farm income.
1927–29	167	145	87
1932	120	65	54
1936	129	114	88
1937	135	121	90
1938	128	95	74

Whereas in 1936 and 1937 the purchasing power of farm income had regained its 1929 level, there occurred a severe setback in 1938—not quite to the disastrous level of 1932 but to one similar to that of 1921 and 1934.

During the last seven years there has been widespread legislation to alleviate the farm situation. This took the form of higher tariffs, export bounties, destruction of crops such as cotton and coffee, benefit payments, quotas, soil conservation, allotments schemes, and price fixing. These governmental activities did not stem the decline that occurred in 1937–38 because they were attacking the problem of solving farmers' buying power by attempting to change the volume or shift the direction of production. But agricultural output can only be changed gradually over a long period of years ; moreover, although variations in farm income may be partly due to variations in the volume of production, it is increasingly realized that they are also due to changes in the general price level and to other factors not easily controlled. Incidentally it is worth noting that the urban consumer never receives the full benefit of low farm prices ; in Oct. 1938 the index of farm prices stood at 96 and that of retail food prices at 137.

Argentina. The importance of Argentine agriculture is centred in her grain crops, which in an average year provide exports making up over half the total value of all exports from the country. Due to adverse weather, the three main crops, maize, wheat, and linseed, all yielded disappointing results in the case of the 1937–38 crop year. Owing to severe frosts at the end of 1937, whole areas of the wheat crop were unharvestable, though the product of the Bahia Blanca Zone in the south was found to be of high baking quality. The following figures indicate the crop situation :

Areas Sown 1937–38	Production 1937–38	Areas Sown 1938–39	Estim. Prod. 1938–39
000 acres	000 met tons	000 acres	000 met. tons
wheat 19 2	5,029	20·9	8,600
linseed 7·0	1,539	6·6	1,620
maize 15 3	4,424	—	—

The 1938–39 wheat crop will probably be the second largest ever recorded , the linseed crop will also be considerable. This, combined with the current situation in regard to world supplies and price levels, made it necessary on Nov. 14, 1938, to fix official minimum prices of 7 Argentine paper pesos per 100 kg. for wheat, and $13 for linseed, in regard to new crop deliveries, to ensure that the farmer should receive at least the bare cost of production. Fixed minimum prices had been suspended since December 1936.

One of the problems of the Argentine grain trade has been that the crops are marketed within three or four months of being harvested. The recently established Grain and Elevators Commission has been rapidly building elevators at ports and along the railways, and in Aug. 1938 a decree was issued fixing at 20 million pesos the credits to be allocated for this.

The production of beef continued at the same level of previous years, but prices improved substantially. Shipments of chilled beef to the United Kingdom totalled £13·8 millions against £13·4 millions in 1937 (*see* MEAT), but towards the end of 1938 prices weakened. On the whole, whereas 1937 had been a relatively good year, in which farmers paid off some of their debts, 1938 was less favourable, particularly for crop farmers. Presumably the 1938-39 season will be worse, since the anticipated harvest, though very large, will not be large enough to offset the catastrophic fall in grain prices. A point of special interest during the year was the agreement reached with The Netherlands whereby a considerable sum of capital is to be devoted to land reclamation work in the Argentine, which land is then to be made available to Dutch settlers.

India. The land area of British India amounts to 666 million acres, of which 227 million acres are under crops, 90 million acres are forest, and 145 million acres are not available for cultivation. Rice covers 80 million acres, and wheat 25 million acres. During recent years great strides have been made in improving the varieties of crops and in finding new uses for by-products. For instance, Pùsa wheats are now sown on nearly 7 million acres, or over one-fifth of the total wheat acreage ; the area under improved varieties of sugar-cane has risen in the last ten years from 2·8% to 68% of the total sugar-cane acreage. Another line of advance, still in its initial stages, is the attempt to utilize the 10,000 tons of cotton wasted every year from the saw gins. Experiments have been made for turning it into chemical cotton, *i e.* purified cellulose, which with acetic acid can be manufactured into artificial silk. It also seems to be becoming commercially feasible to extract the acetic acid from molasses. Another investigation in progress is into the possibility of utilizing India's bamboo wealth for the manufacture of paper.

But perhaps the biggest problem for India is her live-stock industry. The cattle population numbers 215 millions, or nearly one-third of all the cattle in the world. India has far too many cattle—67 for every 100 acres of



Fox Photos]
MR. LLOYD GEORGE WATCHING A GYRO-TILLER, WHICH ROTATES AS WELL AS DIGS, AT WORK NEAR CHURT

crops compared with 25 per 100 acres in Egypt, a country in certain respects similar. Most Indian cattle are permanently half-starved, yield little milk, and accomplish little work Assuming only half the cattle population works and that one-quarter are too young or too old for work, there remain an average of two oxen per seven and a half acres. A pair could cultivate fifteen acres, if farms were not so split up and implements less primitive.

Despite the difficulty that in several states the slaughter of cattle is forbidden on account of Hindu religious principles, interest in cattle improvement is developing rapidly In Feb. 1938 the first All-India Cattle Show was held in the Irwin Amphitheatre at New Delhi. It included an especially fine exhibit of Hariana, Hissar, Hansi, Sahiwal, and Dhanni cattle from the Punjab. Indeed it has been proved that Indian breeds when bred selectively for 25 years are as good as any European breeds. It is now planned to establish herd books for the eight most important breeds of Indian cattle, and propaganda for milk-recording is also being extensively undertaken. The results of a village economic enquiry conducted in seven areas at the instance of the Viceroy showed that milk yields averaged 600 lb. per annum and that the average lactation lasted eighteen months. This was on holdings of seven to 23 acres each worked by an average of six to seven people. The consumption of dairy products amounted to no more than 10·16 oz. per head per day (in milk equivalent). Men drank more milk than women and adults more than children. Evidence of this kind shows the gravity both of the agricultural and of the nutritional problem.

Finally it should be noted that the government of India is publishing a series of volumes on the results of a survey showing the cost of production of the chief crops in eight different provinces.

Japan. Rice production in 1938 was 318,000,000 bushels in Japan proper, 169,000,000 bushels in Korea and Formosa. These figures show a slight decrease as compared with the preceding year. A surplus of 47,000,000 bushels has been brought forward from 1937, so that the supply of rice for this year in Japan is satisfactory.

During the year the Japanese government introduced a national insurance scheme for damage to the paddy and mulberry crops, which are two important agricultural products. It is hoped that this scheme will contribute toward greater economic stability in the districts chiefly concerned. It had already been found that the national insurance of livestock gives good results to that branch of farming, and that the national insurance of fishing-boats and forests has worked well in the fishing and forestry industries.

Denmark. Farmers have had a relatively prosperous year. Contrary to the experience of Australia and New Zealand, Denmark's butter prices did not fall to any very serious extent during the twelvemonth, and although egg prices fell somewhat, bacon remained at the, from the farmers' point of view, relatively profitable level of 104*s* per cwt Exports of butter to the United Kingdom totalled 2,365,291 cwt. in 1938, a slight rise in quantity; eggs declined to 9,511,000 great hundreds; and bacon also declined slightly to 3,389,192 cwt.

The system of the pig cards has successfully adapted bacon production to the limits set by Britain and other importing countries. The relatively low price for milk—6*d*. per gallon—has prevented any undue rise in the output of butter and cheese, while propaganda is doing much to increase the home consumption of these. At the same time, a good price for wheat and sugar beet has called forth a very much larger output, though there may be possibilities of still greater development in this directon. The importation of agricultural raw materials, *i.e* feeding-stuffs, can be to a considerable extent replaced by an increase in the home production of fodder crops, thus balancing the decline in exports. Many Danish agriculturists consider that roots—sugar beet and potatoes—could form a larger proportion of the diet of pigs and cows than they do at present. But to grow more roots would involve more labour, particularly casual labour, and labour is scarce in the countryside. For despite the fairly high level of industrial unemployment, there is a steady exodus from the country to the towns.

The Netherlands. The Netherlands depended for their agricultural prosperity on export markets, and in particular on the German market; but Germany now takes an insignificant amount of Dutch produce.

An extensive series of government measures is concerned with adjusting production of livestock products and horticultural produce to the diminished demand, partly by directly restricting production, partly by heavily subsidizing exports, a procedure which is financed mainly out of taxes on domestic consumption of certain foodstuffs, such as margarine and butter. This appears to have been successful. Pig prices are now remunerative, though the farmers would like to be allowed to produce more. Milk prices at 6*d*. per gallon are low in relation to costs of production, but output must be discouraged and, furthermore, costs can be and are being lowered by increasing the proportion of home-grown feed. The wheat acreage has been doubled in response to a guaranteed price, but sugar beet and potatoes are both restricted. Horticulture is also working far below capacity. The primary result is a great deal of agricultural unemployment.

The second important series of measures has been concerned with assisting in various ways the totally or semi-unemployed. Those who were primarily agricultural labourers are sent to work camps or receive money from their unions or from the commune. Those who are primarily smallholders, and whose income falls below 9 fl. per week receive assistance in kind, making their income up to that sum. They get fertilizers, fencing wire, feeding-stuffs, etc., but have in return to follow the instructions of the State agricultural advisors, who gradually teach them to rationalize their holdings.

Meanwhile the State is making gigantic efforts to increase the quantity of land. As a result of the Zuider Zee reclamation plans, 500,000 acres will be won back from the sea in the next thirty years This scheme is going to create several thousand new farms, and so increase the agricultural production which at its present level is already the principal embarrassment of the country

France. Since France is largely self-sufficient in foodstuffs the central problem is to adjust the inevitable fluctuations of production (seasonal and annual) to the more stable demands of the consuming public and to secure reasonable prices for the producer, who is generally small and in a weak bargaining position. For instance, in 1938 the Wheat Office had to dispose of a very considerable crop surplus To finance exportation and denaturing, it has imposed a tax on all producers varying from 18 francs per quintal (*1s* per cwt) on farmers producing less than 200 cwt., up to *2s 6d* per cwt. on those producing more than 2,000 cwt. Thus the guaranteed price of 200 fr per quintal (*11s. 3d.* per cwt) is in effect reduced to 182 francs or even to 155 francs. It is worth noting, however, that only 7% of the wheat is produced by farmers in the latter class, more than half comes from those producing less than 200 cwt. each.

A need is also felt for some scheme of milk marketing In September, the producers' and wholesalers' organizations negotiated an agreement establishing milk quotas for the big Paris wholesale firms and a fixed retail price of 2 francs per litre (approx *1s. 1d.* per gallon) which is enforced by the threat of cutting off the retailer's supplies Another important development in the dairy industry has been the growth of milk recording. Whereas in 1932 there were only 49 milk-recording societies covering some 16,000 cows, by 1938 this had risen to 91 societies controlling 30,000 cows.

As between France and her North African departments there is some clash of interest in agricultural policy. Algeria can produce wheat, wine, mutton, certain fruits, and vegetables at much lower prices than can France, and since she is an integral part of the mother country, no tariffs can be imposed At present the French market is sheltered from a flood of Algerian products by means of "voluntary" quotas. But Algeria is a country with few economic resources apart from her agriculture and she is capable of producing a great deal more than she is now allowed to.

Germany. The recent trends of German agricultural policy are all in the direction of increasing self-sufficiency. For instance, to combat the deficiency in fats compulsory milk recording was introduced a year ago for all cows on farms where more than three cows were kept. This, together with the compulsory licensing of bulls, will, in a few years' time, it is anticipated, raise the milk yield of cows considerably above the present average of about 575 gallons. Unfortunately, the outbreak of foot and mouth disease in 1938, which touched nearly half the farms in the country, caused a substantial though temporary setback in milk production. The second important deficiency which it is possible to remedy is in the supply of feeding-stuffs. This problem has been tackled in a number of ways. As a result of plant-breeding experiments, a maize has been produced which ripens even in the north of Germany and is said to yield 50% more food value per acre than the oats which it is displacing. Similarly a variety of soya bean yields tolerably good crops in the south.

In order more generally to stimulate production, agricultural prices were raised in 1934–35 nearly 20%, but since then have been held level, so as to prevent any further increase in the cost of food. Wholesale and retail prices of foodstuffs are likewise controlled Furthermore, the distribution of available supplies is directed from a central office. For instance, cattle dealers have first to satisfy the needs of the locality in which they operate before selling to more distant destinations They have to announce their intentions eight days in advance to the *Kreisbauernschaft.* This is reported to the provincial cattle marketing board which passes on the information to the Reich office Dealers are then told to what towns they must send their surplus

In general the price-fixing and other measures have led to a considerable rise in the price of land, which is widely considered the safest form of investment at present.

The 1938 cereals crop totalled 25·9 million metric tons, nearly 1,000,000 tons more than the record crop of 1933 The yields of potatoes and sugar beet were also good though not quite up to the record harvest of 1937. Some difficulty was experienced in maintaining milk production, mainly because of foot and mouth disease; but for this German scientists have produced a new serum which is said to give very satisfactory results. The year was also marked by intense labour shortage in agriculture despite the presence of 400,000 foreign workers. The harvest was accomplished only with the help of shock gangs from the army, from labour camps, and from schools.

Italy. As elsewhere, the wheat harvest was good, amounting to 297 million bushels compared with 296 million bushels in 1937. The fixed price of wheat was increased from 122·75 lire to 135 lire per quintal. Other crops also yielded well. Most classes of livestock showed some increase in numbers as against 1937, though all except cattle (7,670,000) were fewer than in 1930. A propaganda campaign is being launched to promote greater self-sufficiency in livestock products.

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AIR CONDITIONING. A further increase in the desire for and acceptance of air conditioning, because of its benefits to comfort and health, was noted during 1938, more particularly in the United States, in South America, and the West Indies. South Africa continues to support a reasonable air-conditioning activity. Europe and Asia, with the exception of India and the Malay States, have thus far shown relatively little interest in air conditioning.

Air-conditioning Technique. A very few large installations of the central plant type were installed during the year. In those which were installed, there exists a definite trend towards multiple unit, high-speed refrigerating compressors, rather than the heavy, large, slow-speed compressors of previous years. Also, the factory-fabricated unit assembly conditioner continued to find increasing acceptance.

The application of the self-contained or unit type of conditioner is rapidly broadening. Reliable small, air-cooled conditioners are now available at fairly moderate price. These units provide about three-quarters of a ton of cooling capacity. (Equivalent in cooling effect to the melting of three-quarters of a ton of ice in 24 hours.) They are readily installed, and provide for the cooling, dehumidifying, circulation, ventilation, and air filtering of the average room in the house, flat, hotel, or office.

For large offices and small shops, self-contained water-cooled air conditioners are now available up to about ten tons of cooling capacity. These units may be applied to single large rooms with air delivered directly into the room from the unit, or they may be applied to a group of rooms such as a suite of offices or a house, with a simple duct supply and return system Complete summer air conditioning is provided, including cooling, dehumidifying, circulation, ventilation, and air cleaning. All these self-contained units may be used in the winter for circulation, ventilation, and air cleaning. Also, heating and humidifying may be added as accessories to many of these units for winter-time operation.

Summer air conditioning, with gas as a source of energy, marks a growing trend. Such a system may take the following forms :

(*a*) Mechanical compression system with gas-engine drive.

(*b*) Adsorption system with gas as the source of regeneration

(*c*) Absorption system with gas as the source of regeneration

(*d*) Gas-fired steam ejector system.

Systems of all four types are in successful operation now, but considerable developmental work remains to be done, before such systems are commercially practical and before they represent standardized, reliable, quietly operating systems, purchasable at moderate cost

Winter air conditioning, particularly of the direct-fired type, was more broadly accepted in 1938. Such systems are available at moderate cost for gas, oil, or coal firing ; and they provide for heating, humidifying, circulation, and air cleaning. Ventilation can be added for year-round service, if desired, and cooling and dehumidifying for summer use can be added at the time of installation or later, using the same blower, filters, and duct system already installed for the winter conditioning.

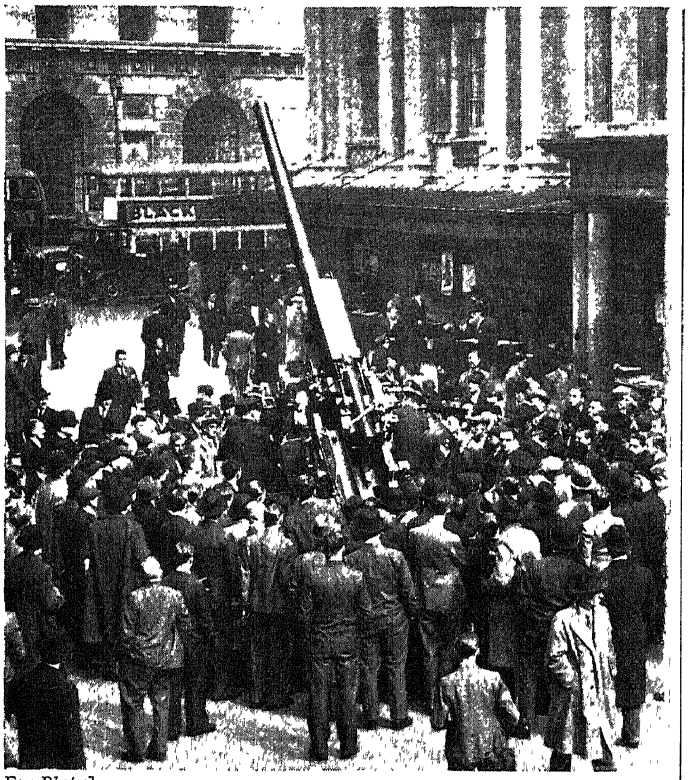
Physiological Benefits. It has long been believed that air conditioning offers certain definite benefits to health ; but except for the definitely proved relief provided to hay fever and pollen asthma sufferers, these benefits still remain to be fully identified by the medical profession. Particular investigations are under way on the destruction of various air-borne bacteria and upon the effects of air conditioning on post-operative cases and common cold sufferers.

AIR DEFENCE. For a country with land frontiers the defence of its soil has always been the main aspect of its military problems, but for an island country " home defence " was until recent years subsidiary to the maintenance of sea-power. Now, however, it claims a foremost place in all military calculations. By the irony of fate this new situation has developed just as the old risks, which had existed for centuries, seemed to be diminishing to zero. The experience of 1914–18 showed that the invasion of a country by forces that had to be carried across the sea had become increasingly hazardous for the invader. Although Britain kept a great number of troops at home to guard against such a danger, it never arose—and it is known that the Germans never seriously contemplated an invasion. Now, with the great growth of air forces, the attempt to land large forces on a hostile coast would seem to have become more difficult than ever in face of the quantity of shore-based aircraft which can be swiftly concentrated at any point to bomb the transports. On the other hand, the advent of air power has brought a new danger—of devastation, panic, and paralysis—to the cities in the interior and to the ports which feed them. The risks tend to grow disproportionately to the rising scale of possible attackers. Even in land warfare an artillery bombardment attains its effect by plastering an area, and so multiplying the chances of hitting a particular target within it, rather than by the particular shells striking where intended. A bomb-dropping aeroplane is still less a weapon of precision than a gun. So much of its effect depends on chance, that great effects can only be expected where the number of aircraft in a raid on any objective is such as to multiply the chances very heavily An attack by ten aircraft may score less hits of significance than an attack by five aircraft, whereas an attack by 100 may do much more than ten times the damage.

The " chances ", however, depend as much on the number and density of the targets which a country offers as on the number of aircraft employed in the attack. Unfortunately, of all great countries England is, with the exception of Japan, the most vulnerable to air attack. And Japan is far less accessible, besides having a population whose type and standard of living make it less dependent for its essential food on supplies brought from a distance. In London, the largest centre of population is combined with the chief port through which not only its own inhabitants but those of other centres are fed Moreover, the metropolis lies closer to the Continent, and thus to the points from which air attack may come, than any of the other important ports or cities. The adverse nature of England's " industrial geography " has been worsened by the tendency of factories to move down from Lancashire and elsewhere to the London area, as well as by the general citywards drift of population.

The reduction of national vulnerability should be the first concern of any scheme of defence framed to meet the modern conditions of war. It embraces measures for the dispersion and concealment of works which may form likely targets ; the duplication of sources of essential supply, so as to limit the effect of damage to any one of them ; the evacuation of the population so far as possible from specially endangered areas ; the provision of bomb-proof or splinter-proof shelter for workers in and inhabitants of such areas ; the organization of emergency services to give warning of impending attacks, to maintain order, to clear debris, to deal with outbreaks of fire or the dissemination of gas, and to restore communication. In Great Britain most of these measures have hitherto come under the Home Office, and the responsibility for carrying them out has been entrusted to an Air Raid Precautions organization—" A.R.P." for short—formed on a local basis.

Beyond such measures of " passive defence ", the state of a country's readiness to meet air attack depends partly on its own air force and partly on ground defence. The defence in the air acts both directly and indirectly. The direct defence against enemy bombers is entrusted to fighter aircraft, whose operations are aided by searchlights from the ground, and is supplemented by various protective devices, of which the balloon barrage is the best known example ; but there is also the indirect defence provided by the counter-offensive power of bomber squadrons against the enemy's country, including the bases from which his attacks may be delivered. The general defence from the ground is provided by anti-aircraft guns, whose fire is aided by searchlights, and may be supplemented by new devices for crippling the attackers. In Great Britain the responsibility for the ground defence of the country is entrusted to the War Office. To the way in which that responsibility has been fulfilled the remainder of this article will be devoted, since the state of the anti-aircraft defences had an important effect on the foundations of British policy during the crisis



Fox Photos]
DEMONSTRATION OF A 3·7-IN ANTI-AIRCRAFT GUN OUTSIDE THE MANSION HOUSE, LONDON

of 1938, while the state of defence *in* the air is more appropriately discussed in the article AIR FORCES.

In the reconstruction of the Army during the years following the World War, the manning of the anti-aircraft defence as well as the coast defence of Great Britain was allotted to the Territorial Army, thus leaving the Regular anti-aircraft troops free to accompany any expeditionary force that might be sent overseas as well as to protect naval bases on the Imperial communications. The scale of protection provided both at home and abroad was very small, and its needs received little attention even when measures of rearmament were undertaken.

Early in 1935 two Territorial air-defence brigades were available for the defence of Great Britain , they comprised a nominal total of barely 100 guns, and the actual number that would have been ready for use had war come suddenly was much less. At a rough calculation the money devoted to them was in the region of £100,000 a year, out of the average of £40 millions that the War Office, which held responsibility for the anti-aircraft defence of the country, had been receiving yearly since the War. In the spring of 1935 the government announced a great acceleration of its general rearmament measures. As a small part of the programme one of the fourteen Territorial Infantry Divisions was converted later in the year to form an Anti-Aircraft Division, the 1st, for the protection of London and the South of England. Another year and more elapsed before a 2nd Anti-Aircraft Division was formed, partly by another conversion, at the end of 1936, to provide some defence for the North and Midlands. The small scale of the provision for anti-aircraft defence had been acutely felt when the tension with Italy over Abyssinia developed in the late summer of 1935. To meet the needs of Britain's Mediterranean garrisons, the stocks of anti-aircraft ammunition at home had to be drained. The guns, moreover, were the three-inch guns of the last war pattern, and although they were described as having been modernized, this amounted to a change of liner, or inner tube, which merely enabled the crew to repair a gun on the spot instead of sending it away The maximum height to which the shells could reach was barely 20,000 feet, while the effective ceiling was little more than 15,000 feet.

As for the searchlight position, the number of lights required for the zone of the 1st Anti-Aircraft Division was about 1,050, on the minimum scale then approved. In the summer of 1936, it could assemble about 120 in emergency, and some of these could be obtained only by borrowing from the Coast Defences Equipment was lacking even for training

In the autumn of 1937, out of the forty-five new headquarters which were needed by the 1st A A. Division, two had been completed. Guns available numbered sixty and searchlights 200. The position of the 2nd A A Division was no stronger The guns were the old three-inch pattern, and the issue of the new and greatly improved 3·7-inch gun was not in sight. This is stated to have a ceiling of about 40,000 feet and the size of its shell burst to be about four times as effective, while the time of flight to the target has been nearly halved—a very important factor in view of the great speed of modern aircraft. None of the new sound-locators were yet issued, nor were the new height-finding and range-taking instruments.

The crisis of Sept. 1938 revealed to the public what was widely denounced as a state of grave deficiency. Experts added that defects of organization made the degree of Britain's unpreparedness much worse relatively than was warranted by the actual state of her rearmament. It was not until after the shock caused by Germany's occupation of Austria in March that the authorities had improvised measures for manning the defences in emergency, aimed—some said over-optimistically—at getting the units into position in twelve hours. By mid-September the approach of the European crisis had become clear. It was not, however, until Monday, Sept. 26, that the calling out of the anti-aircraft personnel was sanctioned. If the crisis had suddenly come to a head during this interval London would have been unprotected by ground defence, and any fighter aircraft would have been unable to operate at night for lack of searchlights to direct them on to their quarry.



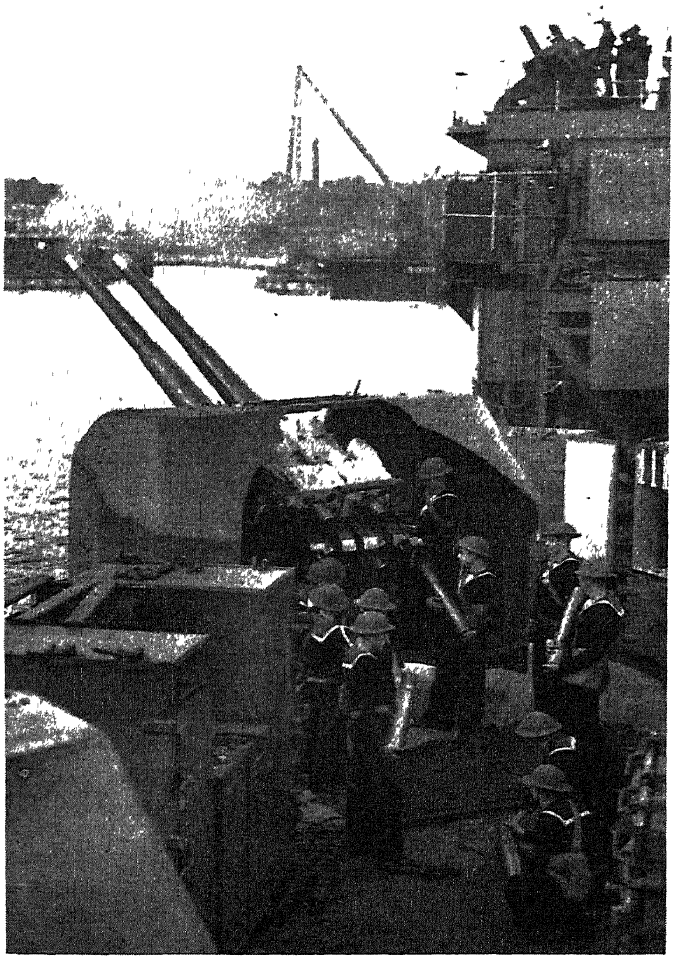
Fox Photos]
SEARCHLIGHT AND LISTENING-POST MANNED BY MEN OF THE TERRITORIAL ARMY

Thanks to the thoroughness of divisional and unit arrangements the process of calling out the anti-aircraft forces worked smoothly in most cases. So far as could be gauged, a considerable proportion of the guns were in position within twelve hours and the bulk of them within twenty-four hours. The second day came, however, with hardly any aircraft available to give them the necessary practice in acclimatizing themselves to their instruments. And many troubles had been discovered with those which had been issued from store.

The mobilization has inevitably disclosed the extent and position of Britain's defences to foreign as well as British observers. But this is weakened as an argument for postponing mobilization by the fact that reference to the current Army List and previous Army Estimates would, by an easy calculation, have given the total number of guns for London's defence as little more than a hundred. This may be regarded as a hazardously small number, but besides it was reported that, after six days of mobilization, perhaps almost half of the guns issued were not capable of engaging an attacker, Some were said to be out of action because the predictors were lacking or defective ; some for lack of dials ; some because the batteries were not charged ; some because they arrived without any instruments at all. It is said that certain units which had sent lorries to the Ordnance depots to collect their equipment were kept waiting or even sent away because official formalities were clogging the procedure of issue. For much of the ammunition delivered at the gun-positions, a different type of fuse was issued from that for which the units were prepared. The modern 3·7-inch guns did not appear to amount to much more than a fifth or a sixth of the guns available—though parliament had gained the impression in the spring that deliveries were already substantial.

It was only in the spring of 1938 that steps to meet the danger of low-flying attack were approved in principle, The creation of the organization to deal with it was, however, postponed, so when the crisis came it was hastily arranged, for lack of proper weapons, to employ ordinary Lewis guns (light machine-guns) supplemented by old naval three-inch guns. Lack of sufficient specially trained personnel then proved a handicap in utilizing the weapons that were provided. If an attack had come, this improvised defence against low-flying attack might have been more dangerous to civilian life and property than to the attacking aircraft ; for the old naval three-inch guns were fired by the obsolete Case 1 method (over open sights), which makes them, when firing shrapnel, easily affected by the natural excitement of the firers. The handling of Lewis guns is even more susceptible to this influence. The scheme for organizing the local defence of vulnerable points against low-flying attack was finally announced on Oct. 14, after the crisis was over.

What are the causes behind the unsatisfactory condition which the crisis brought to light ? Partly, it may be suggested, the reluctance of the government in the past to accept the financial burden involved in raising the scale of the defences to the level indicated by strategic considerations. Partly, differences of opinion between the War Office and the Air Ministry, together with the feeling of each service that the ground defence of the country against air attack is not its natural sphere. Such a tendency on the part of the Air Force was suggested in the summer of 1938 by the way that practice camps were ill-supplied with suitable aircraft targets, and by the fact that senior air officers did not visit them. The War Office long showed



Keystone]
ANTI-AIRCRAFT GUNS OF H.M.S. "SHEFFIELD" IN ACTION, REPELLING A MOCK AIR ATTACK AT CHATHAM

a similar attitude. Some two years ago a close examination of the problem of home defence suggested that the projected scale of guns and searchlights ought to be at least doubled to provide adequate safeguard against air attack. The General Staff made it clear that their main concern was with the formation and equipment of field army for use abroad and that they tended to regard money devoted to air defence at home as money taken from "the Army". In the winter of 1937–38 the new Secretary of State for War, Mr. Hore-Belisha, was instrumental in gaining formal priority for the needs of air defence. But the actual inauguration of the expansion agreed on was put off until the autumn.

A further main cause of the delay in producing the weapons and instruments required, and developing new methods, may be set down as the lack of any centralized organization to deal with the problems and control the anti-aircraft forces. The men actually responsible for anti-aircraft defence were outside the War Office and had to deal with some eight different authorities in securing action. Inside the War Office responsibility was distributed among various departments, and by junior officers in them. It was not until the summer of 1938 that an additional Deputy Chief of the Imperial General Staff was created for anti-aircraft defence, while a single command outside was created. But the powers of the former office were limited by keeping a large part of its natural functions under other departments, and to both of the new lieut.-generals' posts were appointed major-generals who lacked

previous experience of anti-aircraft work, to the disregard of the two major-generals hitherto responsible. Able as they were, it could not but be suggested that time would be lost while they were picking up the threads of the problem. Since, again, the officer who had been selected as the new Deputy Chief of the Imperial General Staff was out in Egypt as head of the military mission, and it was intended to leave him there until November, the new organization had not begun to function in any real sense when the crisis came in September.

What are the most urgent lessons of last autumn's experience ? In the first place, it may be suggested that the time has come for the full step of placing the whole of the anti-aircraft sphere under a single and separate department of the War Office, headed by someone who has mastered the problem from experience. It might even seem wise to constitute the air defence of the country, civil and military, as a fourth service, under a Minister of Defence. Secondly, it might be a wise precaution to create a permanent anti-aircraft covering force, to quicken the process of deployment, by providing the Territorial anti-aircraft units with sufficient Regular personnel to maintain their equipment in a state of constant readiness. Thus in emergency the Territorials would merely have to be rushed out to fill up a defensive framework of guns and searchlights already established in position. The Continental countries have thought it necessary to have a frontier guard constantly ready, yet Britain has no such insurance against surprise, continuing to rely on forces which can only be called out from their civil occupations when the emergency is certain. To call out the whole of the Territorial anti-aircraft forces inevitably arouses public excitement, and for that reason there is a danger that it may be delayed too long in a time of international tension The system has hitherto provided no intermediate precautionary measures between complete defencelessness and the complete mobilization of the Territorial anti-aircraft forces. (B. H. L. H.)

AIR FORCES. It is difficult, if not impossible, to find a simple common denominator on which to compare the real relative fighting strength of the air forces of the world. In warfare on the ground or at sea, armies and fleets form a barrier between the peoples of the warring nations and the attacking forces of the enemy, and before victory can be attained this barrier must be destroyed: fleets are therefore pitted against fleets and armies against armies, and all other things being equal, the gauge of superiority lies in numerical strengths.

The same conditions do not exist in air warfare, since the air provides a medium through which a blow can be struck direct at the people of a country, without the destruction of the opposing air force being a necessary prelude. The striking value of an air force must therefore be measured directly in proportion to its ability to carry out this function. For this reason a mere comparison of relative numbers may be, and very often is, misleading. As it is, however, a convenient and easily presentable method, it has come into general use, and the term "first-line aircraft" has been adopted as the measure of numerical strengths. "First-line aircraft" means the number of aeroplanes actually on the establishment and available for service in formed units.

In addition to these first-line aircraft, an air force must have a number of aircraft, in everyday use, at its various flying schools and other establishments, and the number of these would be in proportion to the number of the first-line aircraft. That is, a country with a large first-line strength would have to maintain a proportionately larger number of aircraft in its instructional establishments than a country with a smaller number of first-line aircraft.

In calculating striking strengths for war purposes, the possible influence of big civil transport aircraft must not be ignored The machines employed on the German civil air lines played an important part in assisting the creation of Germany's air force.

Finally, there are reserves. Prior to the rush to rearm commencing in 1934, first-line aircraft in air forces were numbered in hundreds, and the aeroplanes themselves were mainly built of wood and fabric and, being of comparatively simple construction, cost about £3,500 each. The maintenance of reserves presented neither a costly nor a complicated problem, and most countries aimed at maintaining such reserves on a scale of three or four reserve machines for each first-line aircraft.

It is very doubtful if reserves on this scale will be possible in the future, since not only have first-line strengths grown, but the prices of aircraft have increased to as much as 800 per cent of their cost a few years ago. Furthermore, the creation of extensive manufacturing resources tends to diminish the necessity for maintaining large stored reserves. The present indications are that the larger Powers are aiming at keeping reserves to the extent of fifty per cent to one hundred per cent of their first-line aircraft strengths.

The following numbers indicate, approximately only, relative first-line strengths, with possible reserves, of the stronger air forces of the world:

U.S.S.R.	. .	4,000	first-line aircraft	with	50	per cent	reserve
Germany	.	3,000	,,	,,	,, 50	,,	,,
Britain	. .	2,200	,,	,,	,, 25	,,	,,
Italy	. .	2,000	,,	,,	,, 25	,,	,,
U.S.A.	. .	2,100	,,	,,	,, 30	,,	,,
France	. .	1,900	,,	,,	,, 20	,,	,,
Japan	. .	1,300	,,	,,	,, 50	,,	,,
Czechoslovakia		500	,,	,,	,, 25	,,	,,
Poland	. .	500	,,	,,	,, 20	,,	,,

Considerable differences exist in the basic organization of air forces. Certain countries believe that the air arm will be employed on major operations of war independent of either Navy or Army, and have developed their air forces as a distinct and separate service.

Britain was the first country to separate the air arm from the other fighting services and to develop it as a force with a separate administration and independent command, under the control of its own Minister and Department of State; making that Department responsible in addition for the provision and maintenance of such aeronautical material and personnel as might be required by the sea and land forces This example was subsequently followed by Italy, France, and Germany, the latter with this difference, that the Minister for Air is responsible to the Reich Minister for War who is commander-in-chief of all the armed forces.

In Britain the original centralized organization has undergone a certain modification, and in 1937 it was decided that the Royal Navy should administer and develop all that side of the air force which was required directly for use with the Naval forces. The Air Ministry is now in the process of handing over its responsibilities in these respects to the Admiralty.

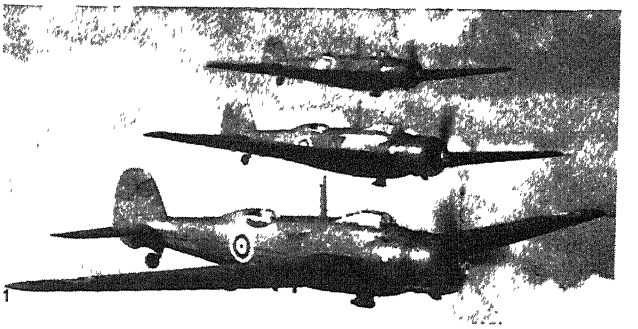
The United States of America and Japan, on the other hand, have retained their air forces as an integral part of their sea and land forces. In the U.S.S.R. the air force forms part of the Army, and the lesser Powers have

incorporated their air forces in previously existing services.

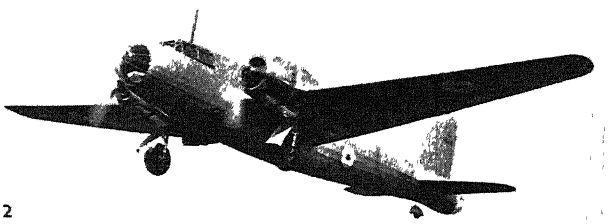
Russia. The Russian air force is quantitatively the largest in the world. Whether it is qualitatively the equal of its neighbours is becoming doubtful, since the greater portion of its strength had already been created during the period in which considerable technical changes were taking place in the world of aviation, and it is reasonable to doubt if the bulk of Russian equipment is keeping pace with the rapidity of modern development. It may be argued from experiences in the Spanish Civil War that Russian aircraft, both bombers and fighters, have shown performances fully equal to that of the aircraft of other countries, but the aircraft in Spain appear to have been samples of modern production and it is doubtful if re-equipment is progressing in Russia on a scale and at a rate which will bring her vast numbers up to present-day standards. As is to be expected of an air force mainly designed for working with an army, the largest proportion of its aircraft are fighters, attack aircraft for use against ground objectives, reconnaissance types and light bombers. Russia has, however, developed a heavy bomber capable of carrying big loads for long distances, and it is estimated that she has between 400 and 500 of this type Much of the organization and progress in Russia has been directly due to the employment of foreign technical advisers on a large scale. The services of these advisers are gradually being dispensed with, and it remains to be seen if the technical progress already made is maintained.

Germany. An important particular in which the German air force differs from other air forces is that the control of the whole ground-defence system, including guns, searchlights, balloon barrages, etc , is centred in the Air Ministry. The evolution of the German Air Force, its speed of expansion and its technical re-equipment, has been remarkable. In March 1935 the German Chancellor announced the creation of the German Air Force in defiance of the prohibitions imposed by the Peace Treaty of Versailles. The strength, according to his announcement, was equal to that of the total British Air Force, *i e.* it was judged to be something between 600 and 800 aircraft. The methods by which a force of this strength was produced suddenly and without warning are worthy of note, since the civil organization, which enabled it to be produced, is still in existence. In 1930 Germany brought into being an organization termed the "Air Sports Association" in order to co-ordinate all those aviation activities which were outside the scope of the commercial air transport concerns. For purposes of administration, Germany was divided into sixteen areas, and each area was divided and subdivided until the convenient unit of a sub-group was reached. There were some 10,000 of these sub-groups throughout Germany, and to each was entrusted the task of training the youth of its particular district to proficiency in the varied ground trades of an air force and in flying. Members were enrolled as young as sixteen. Training was, in this way, carried out on a territorial basis throughout the whole country, while control was retained in the hands of a central body. Thus it was the "Air Sports Association" which provided the very broad foundation on which the German Air Force was constructed.

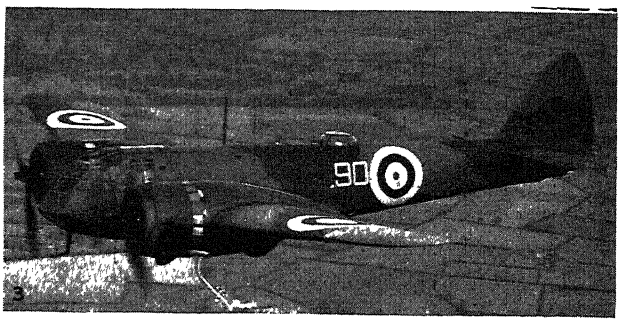
At the present date the first-line strength of the German Air Force is estimated as between 3,000 and 3,500 aeroplanes, and its composition as originally organized contained a very high proportion of bombers to fighters. Of the bombers the majority are of a medium-size, high-speed, small-load (half a ton of bomb) type. As a result of



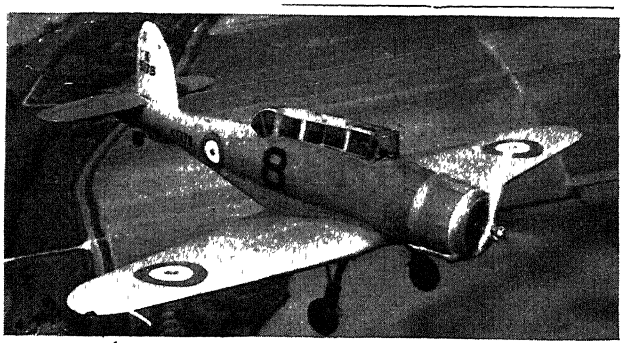
1 VICKERS-ARMSTRONG "WELLESLEY" LONG-RANGE BOMBERS



2 VICKERS-ARMSTRONG "WELLINGTON" BOMBER



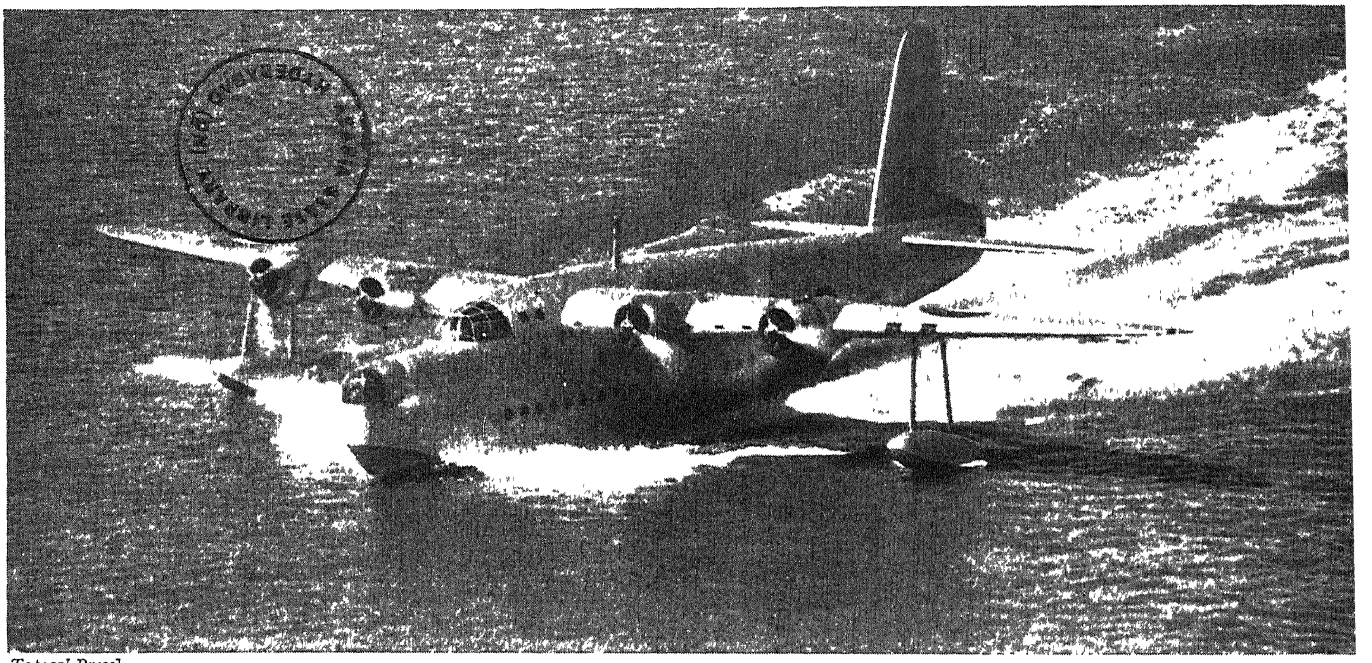
3 BRISTOL "BLENHEIM" HIGH-SPEED BOMBER



BLACKBURN "SKUA" NAVAL DIVE BOMBER



Chas. E. Brown]
ARMSTRONG-WHITWORTH "WHITLEY IV" HEAVY BOMBER



Topical Press]

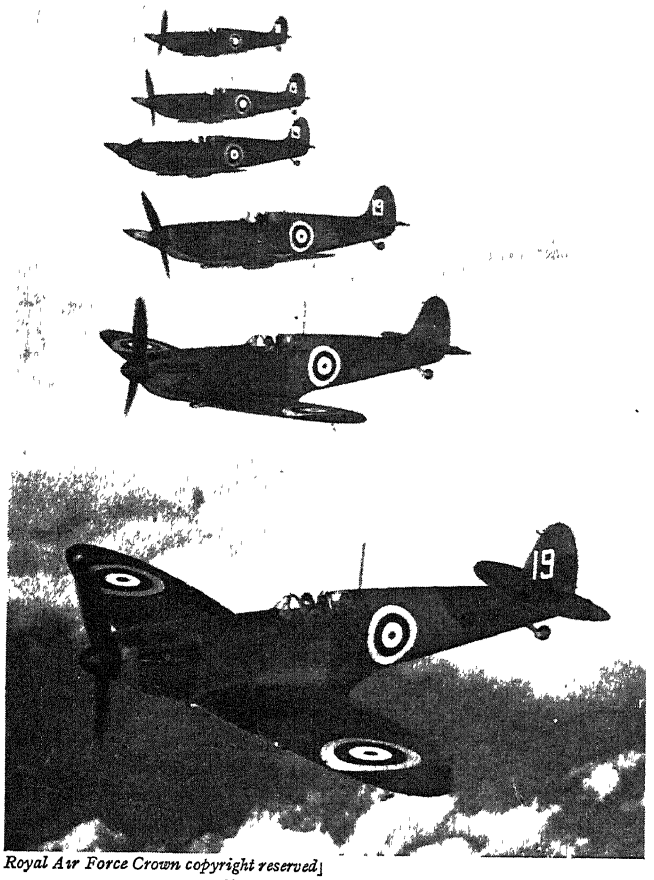
THE SHORT "SUNDERLAND" RECONNAISSANCE FLYING-BOAT ABOUT TO TAKE OFF

experiences in Spain, where it has become the practice for bomber formations to be escorted by fighters, it is likely that the proportions of fighters to bombers will be increased, and the function of a specially developed fighter extended to escort duties. The general organization of the German Air Force is peculiar to itself and aims at a very high degree of decentralization, each general officer commanding being entirely responsible for all air force activities, including recruiting, training, and defence, in the area under his command. Operational units are free of all responsibilities in regard to maintenance and repairs, which are carried out by a special corps, mostly on a civilian basis and recruited direct from the technical colleges and the engineering industry.

Britain. The strength of the British Air Force, in March 1935, when Herr Hitler announced the existence of the German Air Force, was about 850 first-line aircraft, but the foundation which was actually available on which to commence the expansion project was only some 35 squadrons, owing to the absence in the Mediterranean and elsewhere, during the Abyssinian campaign, of the remaining squadrons. It was on this very narrow base that the expansion programme was carried out and to this was largely due the personnel difficulties that have been encountered. At present there are two parallel processes of expansion continuing at the same time: the expansion of the Royal Air Force to a figure which must ultimately be governed by the growth of the German Air Force, and the expansion of the Naval Air Service to meet the increasing commitments of our growing fleet, to a probable total of about 700 first-line aircraft. Hitherto the proportion of bombers to fighters in the British Air Force has been accepted as two to one, but this proportion is likely to undergo modification, since it seems inevitable that the number of fighters will increase in relation to the bomber strength. The majority of the bomber squadrons are armed with a high-speed, medium-range, medium-load, bomber. Hitherto the fighter defence has been based on the employment of a single-seater machine fitted with fixed forward-firing guns. This policy appears to be undergoing a change, as a two-seater free-gun fighter, comparable in speed with its single-seater contemporary, has been adopted to supplement the fighter defence.

Italy. Although Italy's first-line strength appears to be about 2,000 aircraft, the actual strength available for concentration at home is considerably less than this, since her commitments in Libya, East Africa, and Spain must have absorbed at least 25 per cent of her available total. One of the chief aims in Italian aircraft development has been the production of a fast long-range bomber to dominate the Mediterranean, and in 1935 it is probable that she possessed in the "Savoia 79" the most efficient long-range type in Europe. Recent developments indicate that she is still concentrating considerable energy in improving this type of machine. Italian aircraft constructors still adhere to a method of construction employing both wood and metal, which makes for flexibility and cheapness in production. Of her total aircraft strength approximately half are bombers. She has also to some extent followed American practice in building a high proportion of "attack" aircraft for low-flying attack on ground objectives.

U.S.A. America maintains its air forces as adjuncts to the Navy and Army, each separate air arm being administered by the State Department of the parent Service. The American Naval Air Service is controlled and manned entirely by officers and men of the regular Navy, and all combatant ships of suitable size carry their own complement of aircraft, varying from three on battleships and cruisers to 76 on aircraft carriers. The functions of the service are to provide for the needs of the fleet, and to this end specialized types of aircraft have been developed, which tend more and more to differ from those developed by the Military Air Service. Military Aviation, or the Army Air Corps, comprises (*a*) the air forces assigned to G.H.Q. Air Force, (*b*) those constituting an integral part of armies and corps, (*c*) those assigned to overseas service, and (*d*) those assigned to the zone of the interior. The administration and control of the Army Air Corps within the limits of the United States is vested in General Headquarters Air Force, and the Chief of the Air Corps is adviser to the War Department which controls everything connected with military aviation.



Royal Air Force Crown copyright reserved]
A FORMATION OF "SPITFIRE" CRUISING LINE ABREAST AT 300 M.P.H.

France. France, from leading position amongst the air powers of the world, has dropped to sixth place as regards air strength. Of her total of rather less than 2,000 aircraft, at least 25 per cent are stationed in her North African colonies, the Levant, and Indo-China. While, at the commencement of the race to rearm, she was in the most favourable position as regards numbers to carry out an expansion programme, she has failed to keep pace with the expansion of any of her neighbours and, owing to a series of industrial troubles, the re-equipment of her squadrons with modern types has been retarded. The reorganization of the Air Force commenced in 1935 was abandoned at the beginning of 1938 and a new organization has been adopted. Hitherto the French Air Force has been organized mainly in the light of army requirements, with a correspondingly large proportion of relatively short-range, reconnaissance, bomber, and fighter types of aircraft. New types, however, indicate a change of policy, and concentration on the production of the large long-range heavy bomber has already commenced. All her Air Forces are administered by the Air Ministry, but ship-borne aircraft form an integral part of the naval forces, and naval co-operation aircraft, not carried on board ships, are at the disposal of the Minister of Marine.

Japan. The Japanese Air Force, like that of America, is divided between her Army and Navy, each Air Service being under the control of, and administered by, its parent Service. During the progress of the war in China considerable changes have taken place as regards both numbers and types of aircraft. The proportion of bombers to other types has been greatly increased, and modern machines of comparatively long range (1,000 miles) have replaced the old types. The total air strength is roughly divided between the naval and military services, and an increase in both air services is in project. (L. L. M.)

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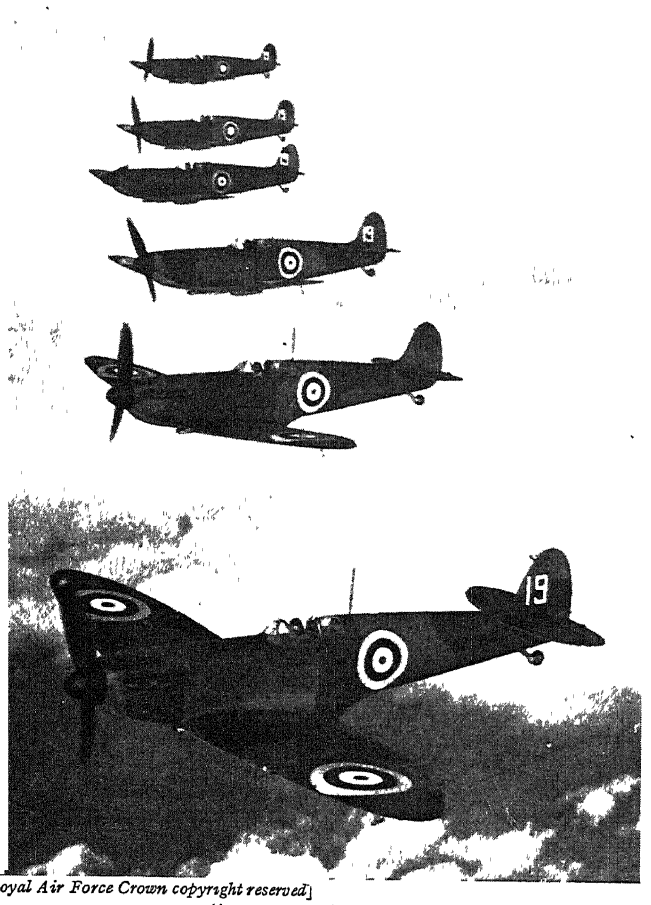
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The problem of subsidizing aerodromes was discussed at the conference of the Aerodrome Owners' Association early in 1938. It was stated that during 1936 and 1937 the total losses of 28 civil aerodromes amounted to £137,107. There are standard landing fees for all aerodromes (9*d*. for every 1,000 lb. of the permissible loaded weight of the aircraft in question). The government has done its best to encourage the construction of new aerodromes, but dissatisfaction has been voiced with regard to the rental procedure followed by the Air Ministry.

The problem of a central airport for London has not yet been solved, in spite of all efforts. Croydon, Heston, and Gatwick are not considered suitable for future development. The City of London Corporation decided to spend £600,000 at Fairlop Plain (Essex), but this site appears to have since been dropped as unsuitable. Imperial Airways and the Southern Railway collaborated in plans for a site at Lullingstone (near Swanley Junction). Another proposal is for an ariport at Mucking; this would offer the advantage of a combined seadrome and aerodrome, provided that a control of shipping would permit the use of the river Thames at Lower Hope Reach for seaplanes.

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On the Continent the Tempelhof aerodrome at Berlin has become one of the most lavishly built airports. Its site has been extended, so that the landing area forms an oval shape whose dimensions are no less than 2,750 × 1,850 yds. All around is a wide concrete apron about four miles in length. Miles-long sheds and administrative buildings have been erected after demolition of the existing ones. Grandstands for a seating accommodation of more than 60,000 spectators are provided. Factory chimneys and church towers have been restricted in the neighbourhood of this airport. For the purpose of loading and unloading aeroplanes, a special apron of a quarter-mile length with a wide canopy over it is provided. The cost of this airport is said to exceed £5 millions. The completed airport will be



Royal Air Force Crown copyright reserved]
A FORMATION OF "SPITFIRE" CRUISING LINE ABREAST AT 300 M.P.H.

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opened during 1939, landing-ground and part of the buildings already being in use.

One of the largest and most modern equipped airports is Le Bourget, near Paris, the longest runway of which is 8,100 ft. While at the time of the opening the new terminal building was considered more than adequate for the next two decades, a project for a new and still larger civil airport near Paris is already being studied. The present airport combines a military and a civil aerodrome.

At Lisbon a big modern airport is under construction. It is intended for the future transatlantic services via the Azores, for which a stop has to be provided in Portugal, according to agreements Portugal has concluded with Great Britain, France, U.S.A , and Germany. It is reported that the new airport will be constructed with British assistance.

The Dutch government intends to convert the recently enlarged Amsterdam airport at Schiphol into a purely military aerodrome, and to provide a new commercial airport near Leyden (25 miles from Amsterdam) A fierce opposition has been raised against this project.

An expensive airport has been created at Bromma, near Stockholm, partly out of the rock. More than £600,000 had to be invested in its construction. The airport is provided with four long concrete runways. The new Stavanger seaplane base is Norway's first civil airport. A new civil airport at Oslo is well under way. Helsinki (Finland) has provided a civil airport especially laid out for the requirement of blind approaches.

In Asia, one of the most important aerodromes has become the combined land and sea aerodrome at Singapore. This modern airport, with 250 acres of landing surface and unobstructed surroundings, has a domed surface (upward slope 1 in 160) and is underdrained by forty miles of pipes. A waterway of 600 ft. width connects the mooring area with the outer harbour.

Another combined land and water aerodrome is the new airport at Basrah ('Iraq). It provides well-sheltered reaches for big flying-boats.

The South African government is spending £100,000 on the provision of a new flying-boat base at Durban Bay, on a site which is very near to the city. Eventually a new civil aerodrome will follow. A number of aerodromes and emergency landing-grounds is under construction in South Africa. The important Rand airport near Johannesburg is being enlarged.

Newfoundland's new civil airport near Gandar Lake will be of special importance for the northern transatlantic air routes. The total area provided for this airport is 770 acres, with an aerodrome size of 250 acres. The night lighting system makes use of a flare path with modern electric equipment, including collapsible boundary lights, because of the frequent fogs. Generally, flarepaths are by now considered obsolete for night landing on aerodromes, and floodlighting has become the rule, except for night alightings with seaplanes. The Newfoundland airport is provided with four concrete runways. (A. R. W.)

In the United States, the Civil Aeronautics Authority controls over 22,994 miles of domestic airways equipped with lights or radio beacons or both, and the total of equipped airways is now 33,239 miles. This system links together 1,277 municipal, State, and commercial airports and includes 267 government emergency fields, with a total of 718 airports and fields equipped for night flying. Part of this was constructed during the depression in connexion with unemployment relief, and the Works Progress Administration contributed sums which will total more than $86 millions by 1939.

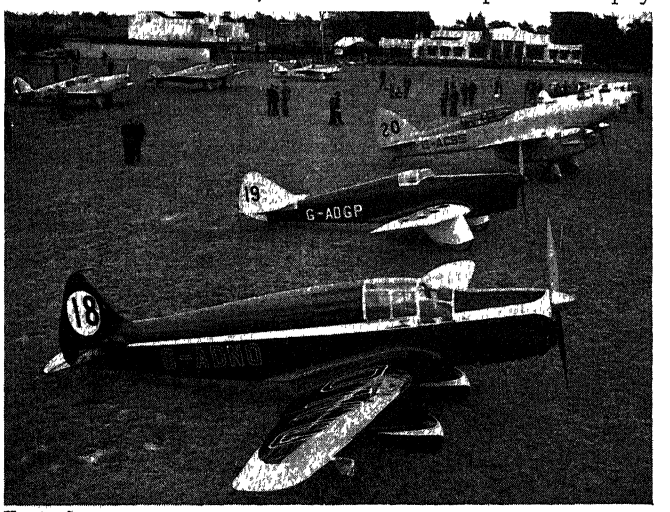
During 1938 perfection of the " Terrain Clearance Indicator " was accomplished and this device should be of tremendous aid in blind landings, as it indicates the distance from the terrain below regardless of the altitude with respect to sea level. A recent noteworthy construction is New York's new airport at North Beach, which was constructed by the heroic method of filling in some 400 acres of Flushing Bay to provide a total of 550 acres and permit runways up to 6,000 feet long. Built by the city with the assistance of the Works Progress Administration, at a total cost of around $28 millions, this airport's opening date has been set for April 30, 1939. Pan-American Airways' chain of facilities across the Pacific remains one of the most daring airport developments of recent years. This organization now operates 53,166 miles of route, has 172 " ports of call " and (including other airports and emergency facilities) has more than 300 bases in all. The Pacific chain includes many unusual airports, one being the Wake Island base which had to be constructed on a tiny and formerly uninhabited island over 1,000 miles from the nearest other land in the Pacific. Despite the difficulties surrounding such construction, less than six months elapsed between inception and actual completion of the entire Pacific chain.

AIR RACES AND RECORDS. The handicap for the King's Cup took place on July 2, 1938, over a triangular course (twenty laps, 1,012 miles) from Hatfield Aerodrome ; eighteen out of the nineteen competitors finished, and the average speed of the winner, who also did fastest time, was 2½ m p.h. greater than last year's—itself a record and on a machine of similar make. The first three were : A. Henshaw (Percival Mew Gull), average speed, 236¼ m.p.h. ; G Guthrie (Percival Mew Gull), 220½ ; L. H. T. Cliff (Miles Hawk Major), 146¼ ; the respective handicaps were : 11 min. 4 sec., 18 min. 17 sec , and 2 hr. 40 min. 26 sec.

The eighth annual race from London to Cardiff (this time including Swansea), 192 miles, was won from scratch after an exciting finish on Sept. 10 by G. R. de Havilland, who was first both for speed (average, 187½ m.p.h.) and on handicap (41 min. 44 sec.), out of a field of six. He flew a T.K 2, entered by Viscount Wakefield.

The only international event was the 26th race for the Gordon Bennett Cup. One Swiss, two Polish, three Belgian, and three French balloons started from Liége on Sept. 11, and the winner, *i.e.* the entrant landing nearest to the place that he had previously declared, was Polonia II (Polish), which reached Pojizena, Rumania (1,030 miles), on Sept. 18.

In the United States, the Golden Gate Exposition Trophy



Keystone]

PLANES ASSEMBLED AT HATFIELD FOR THE KING'S CUP AIR RACE

was won at the first annual Pacific Air Races on May 30 by Earl H. Ortman, at the record speed of 265·5 m p h This speed was beaten in September by Col. Roscoe Turner, who won the Thompson Trophy at Cleveland flying at 283·419 m p h.

Records. A great number of record performances and long-distance flights were achieved during 1938. Only a few outstanding performances may be mentioned.

A E Clouston flew with a passenger in a De Havilland Comet monoplane from England to New Zealand and back (27,000 miles) within twelve days, requiring 4 days 8½ hr for the journey from England to New Zealand.

Howard Hughes flew from New York to Paris, Berlin, Moscow, Omsk, Yakutsk, Fairbanks, Minneapolis, and back to New York with a Lockheed 14 twin-engined transport 'plane and a crew of four—a distance of 15,000 miles in 3¾ days.

A formation flight from Rome to Rio de Janeiro in two days with a landing at Dakar was accomplished by three Italian aeroplanes in January. A greater performance was a long-distance flight by three British R.A.F. single-engined landplanes, with a non-stop flight from Egypt to Australia.

A flight from Berlin to Tokyo was made in December by a German Focke-Wulf Condor four-engined air liner (8,500 miles in 46 hours, with landings at Basrah, Karachi, and Hanoi). One passenger and a crew of five were carried. The same landplane (with Captain Henke and Flight-Capt von Moreau) had flown before from Berlin in a non-stop flight to New York (3,942 miles), and, after a short landing, back to Berlin in 25 hours' flying time ; the starting weight amounted to eighteen tons.

After a start by composite launch, the Short-Mayo Mercury four-engined floatplane flew from Dundee with mail to South Africa (5,997 miles) on Oct. 6–8. The same aeroplane had flown during July from Foynes (River Shannon, Eire) to Montreal, and from there to New York, in about 25 hours' total time.

An "unintentional" transatlantic crossing from New York to Baldonell (Eire) was performed by Douglas Corrigan during July, with an old Curtiss Robin three-seater aeroplane. (*See* also AVIATION, CIVIL.)

AIR RAID PRECAUTIONS: *see* AIR DEFENCE ; NATIONAL SERVICE.

AJMER-MERWARA is an isolated district of British India in the Rajput States ; area, 2,771 sq. miles ; population 560,292. The Chief Commissioner for the area (Mr. A. C. Lothian) is also the Governor-General's Agent for Rajputana. Merwara is hilly and sparsely cultivated ; Ajmer, aided by plentiful irrigation, grows cotton and the cheaper food grains. Some 78 per cent of the population are Hindus ; Western Hindi and Rajasthani are the prevailing languages. The capital, Ajmer (pop. 119,524 ; founded A.D. 145), is the seat of the Mayo College, for the education of young Rajput nobles, and a big railway centre. Seven miles away is Pushkar, India's most sacred lake. (ME.)

ALASKA. The area of Alaska is about 586,400 sq. miles, one-fifth that of the United States. The population (1930 census) was 59,278 (white, 28,640 ; Indian, 29,983). The chief products are fish, metals, and fur. In 1938, fish and fish products shipped from the Territory were valued at $50,225,025. Of this amount, $42,677,210 represents the value of canned salmon alone, which is the principal industry of the Territory. The total value of mine products shipped to the United States in 1938 was $28,693,088, of which the gold shipments amounted to $18,575,002. Furs valued at a total amount of $3,312,865 were shipped from Alaska during the calendar year 1937, an increase of nearly $400,000 over the previous year.

Improved transport, particularly improved aerial transport, is Alaska's chief need. The outlook for further aerial development through the co-operation of the Alaska Aeronautics and Communications Commission with the Federal Government was very good in 1938. Scheduled air routes will soon be in effect between Puget Sound and Fairbanks and possibly Nome, as well as other points in Alaska. As new routes are added this will open up much of the Territory which is now inaccessible.

Largely owing to the development of the Matanuska colonization project, there has been a marked increase shown in agriculture, particularly in the Kenai peninsula country, where Homer is the centre of agricultural development. Scores of farmers settled there during 1938. This and other settlements are deserving of all possible encouragement.

Tourist travel continued to increase, and during the summer of 1938, all ships plying to Alaska carried capacity loads.

ALBANIA. M. Kotta's cabinet remained in office, changes of personnel, without political significance, being made in May. Foreign relations were unchanged, and continued most cordial with Italy. Progress was made with communications, notably the important roads Shkodra–Theth, Shkodra–Kukës, Burrel–Peshkopi, Tirana–Ndroq–Durrës, Elbasan–Devoll–Korça, Saranda–Butrinto. Sub-prefectures previously abolished were restored, 42 new Communes created, and the foreign names of many villages Albanianized. Evidence of a new outlook in education was revealed in the substitution for all "town schools" (lower secondary) of "work schools", where



Planet News]
KING ZOG AND QUEEN GERALDINE OF ALBANIA AT THEIR WEDDING, APRIL 27, 1938

instruction is mainly agricultural, technical, and commercial; 22 more elementary schools were built, classes for illiterate adults, having proved successful, were extended Activity continued in the improvement of land, agriculture and stock; all fishing rights were contracted to an Italian company for 25 years. The Agrarian Bank opened three branches; and the National Bank of Albania erected new headquarters, now the most imposing building in Tirana.

British organization of the Gendarmerie ceased The first broadcasting station, 3 kw. short wave, was inaugurated at Tirana on Nov 28. The Pope appointed an Apostolic Delegate; and four Moslem sects formed a central religious and cultural organization, "Drita Hyjnore" (Celestial Light).

King Zog married, April 27, Countess Geraldine Apponyi of Hungary. On Sept. 1 the tenth anniversary of the proclamation of monarchy was celebrated. (D. R. O. H.)

Area and Population:
Area (approx.) 10,800 sq. miles.
Population (est. Dec. 31, 1936) 1,100,000.
Chief Towns: Tirana (30,806), Scutari (29,209).
Ruler. King Zog I.
Language. Albanian.
Religion. Moslem 71 per cent, Albanian Orthodox 19 per cent, Roman Catholic 10 per cent.
Production 1937:

Wheat	39,900 metric tons
Maize	137,900 ,, ,,
Oats	11,200 ,, ,,
Tobacco (1936)	1,600 ,,
Wool (,,)	2,100 ,, ,,

Overseas Trade (000's omitted):
Imports (1936), 16,300 gold francs; (1937) 20,300 gold francs.
Exports (1936), 7,200 gold francs; (1937) 10,200 gold francs.
Finance:

Revenue, ordinary (1937–38)	21,600,000 gold francs
Expenditure ,, (,,)	21,100,000 ,, ,,
Public Debt	68,200,000 ,, ,,
Notes in circulation (Oct. 31, 1938)	11,000,000 ,, ,,
Gold Reserve (,, ,,)	7,600,000 ,, ,,
Exchange Rate (Dec. 1938)	20·60 gold francs = £1 sterling

Roads: about 1,200 miles suitable for motor traffic.
Defence: compulsory service of 18 months; strength, army, 13,000 approx.

ALBERTA. The year was a bitter one for Mr. Aberhart and his Social Credit cabinet. It began with the rejection of the appeal of two of his prominent supporters, sentenced to prison for criminal libel in a pamphlet entitled *Bankers' Toadies*. It continued with the Canadian supreme court's disallowance as unconstitutional of bills passed earlier to tax banks and control credit and the Press, a judgment later upheld on appeal by the Privy Council. The budget could hardly bring joy to a Social Credit heart, being drawn on orthodox principles, imposing heavy new taxation and, even so, calculating for a deficit of $1,500,000. Economies introduced included the closing of Government house, a saving in upkeep of $20,000 a year. During the June elections in neighbouring Saskatchewan Mr. Aberhart and a team of lieutenants stumped the province on behalf of the 41 Social Credit candidates who had been put up, but only two of these were successful. Further Alberta taxation measures were disallowed by the Dominion government in the same month. In December Mr. Aberhart announced that under present circumstances, Alberta would not be able to redeem the $3,500,000 bonds maturing in Jan. 1939. During the year the question was raised of



Fox Photos]
VALLEY OF TEN PEAKS, BANFF NATIONAL PARK, ALBERTA

separating the Peace River block of Alberta and British Columbia to form, with Yukon, a new territory or province of the Dominion. Mr. Aberhart, on the other hand, wanted to see Alberta's area extended up through the north-western territories to the Arctic, thus increasing the extent of the province from 255,000 to 500,000 sq. miles.

Alberta emerged in 1938 as one of the great oil-producing areas of the British Empire, production from the Turner Valley fields topping 7 million barrels, compared with 2,075,338 in 1937 and 1,320,442 in 1936. In April an Oil and Gas Conservation Act was passed and a board set up for the regulation of production.

Area and Population:
Area 255,285 sq. miles.
Population (est. 1937) 778,000 (Indians 15,249).
Chief towns (pop. 1931 census): Calgary (83,761), Edmonton (79,176), Lethbridge (13,489).
Premier. Hon. W. Aberhart.
Production:

Field crops (1937)	$130,474,000
Dairy produce (1937)	$17,117,000
Minerals (1936) $23,305,726 (coal, 5,696,960 tons; natural gas, m.cu.ft. 17,407,820; petroleum, crude, $3,019,930).	
Minerals (total value 1937)	$25,328,640
Water power (Jan. 1, 1938) developed	71,597 h.p.

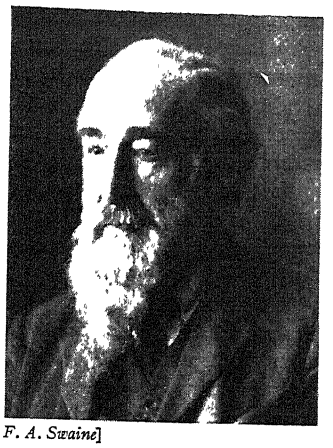
Manufacturing Industry 1936:
Establishments, 905; capital, $70,224,578; employees, 11,756; gross value of output, $74,052,010.
Communications and Transport:
Roads (March 31, 1937): total 62,802 miles (earth 60,140 miles.)
Railways (December 31, 1936) 5,687 miles
Motor vehicles licensed (December 31, 1936): cars, 76,882; commercial, 16,417; buses, 91; cycles, 480.
Finance:

Revenue, ordinary (1935–36)	$16,636,652
Expenditure, ordinary (1935–36)	$18,287,450
Debt, gross bonded (1936)	$128,140,260

Education. Controlled schools (1936) scholars 167,193

ALEXANDER, SAMUEL, British philosopher, was born of Jewish parentage in Sydney, New South Wales, on Jan. 6, 1859, and died at Withington, near Manchester, on Sept. 13, 1938. After a school and university education in Melbourne, he proceeded to Balliol College, Oxford, where he took a First Class in Classical Moderations,

Mathematical Moderations, and "Greats". He was a Fellow of Lincoln College, Oxford, from 1882 until 1893, and from 1893 to 1924 was professor of philosophy in the Victoria University of Manchester Alexander was a Fellow of the British Academy, was president of the Aristotelian Society from 1908 to 1911, Gifford Lecturer at Glasgow from 1916 to 1918, and Herbert Spencer Lecturer at Oxford in 1927. He received the Order of Merit in 1930 His publications include *Moral Order and Progress*, 1889 (which won him the Green Moral Philosophy Prize); *Space, Time, and Deity*, 1920, 2nd impression 1927; *Spinoza and Time*, 1921; *Art and Material Beauty*, 1925; and *Beauty and Other Forms of Value*, 1933.



F. A. Swaine]
PROFESSOR ALEXANDER

ALEXANDRETTA, SANJAK OF: *See* HATAY, THE.

ALGERIA. The year 1938 was marked by a return to calm and by an economic revival.

The local propaganda of a nationalist and revolutionary character which had been carried on by *L'Etoile Nord-africaine* was checked by the condemnation, on Jan. 14, of its leaders and the arrest of their substitutes on March 31.

The Ulemas, doctors of Moslem law, who are working for the restoration of Islam in Algeria in accordance with the cultural and religious ideals of Pan-Arabism, held a congress (Sept. 23–25) in Algiers. This congress resulted in an important split. Sheikh El Okbi, an influential Algiers theologian, broke with the society directed by the powerful Ben Babis of Constantine, whose irreconcilable opposition to the French government showed no signs of abating even during the international crisis of September. He set up a new religious society in opposition to the Ulemas, its name being El Islah el Islahi (Moslem Reform), and its objects purely moral and social.

In spite of the efforts of the Moslem Congress, to unite the natives into a "permanent Co-ordination Committee", in association with the Left Wing political elements of the Popular Front, the demands put forward became less violent In January the Moslem deputies, who had resigned in a body, resumed their co-operation with the government with a view to supporting the Blum-Viollette bill which would grant the electoral rights of French citizens to the 20,000 natives retaining their personal status.

This proposal met with steadfast opposition from the French colonists, and the February elections to the Financial Delegations, which vote the Algerian budget, showed a swing by the French electorate towards the extreme Right. The acceptance in March of the Blum-Viollette proposal by a commission of the chamber led to the resignation of hundreds of mayors and councillors, who only resumed their positions after the *Anschluss* The government then temporarily shelved the proposal.

Algeria's trade during the year increased by 36 per cent over 1937 For the first time in five years, the 1937 budget showed a surplus of 200 million francs, and the 1938 budget seems likely to give similar results. The estimates for 1939, are: revenue 1,910,000,000 francs; expenditure, 1,909,000,000 francs.

During 1938 the Governor-General concentrated especially on affording assistance to native cultivators, both by installing them in co-operative groups on the land available, and by giving them loans of money, seed, or tools provided by the native provident societies.

A new organization, the Commission d'Études du Haut-Comité Méditerranéen, consisting of equal numbers of representatives of Islamic ministers and technicians on the one hand, and native Algerian delegates on the other, sat for the first time in Paris under the presidency of M. Chautemps with a view to the study and improvement of the native system of métayage, the Khammessa (Dec. 13–17). (C. A. J.)

Area and Population:

Area: Northern Territory 222,120 sq. miles; Southern Territory, 623,280 sq. miles.



S.A.F.R.A.]
M. CAMILLE CHAUTEMPS AND M. LE BEAU, GOVERNOR-GENERAL OF ALGERIA, WITH THE ALGERIAN DELEGATES AT THE CONFERENCE OF THE SPECIAL COMMISSION OF THE MEDITERRANEAN HIGH COMMITTEE AT THE HOTEL MATIGNON, PARIS

Population (1936), 7,234,684 (Europeans, 987,252)
Chief Towns: Algiers (264,232), Oran (209,671), Constantine (133,777).
Governor-General. M. Le Beau.
Language. Arabic.
Religion. Mohammedan.
Production, 1937:

	Metric tons		Metric tons
Wheat	903,800	Potatoes	131,200
Barley	598,100	Wool (1936)	21,300
Oats	138,800	Iron Ore	1,265,000

Wine, 15,424,000 hectolitres.

Overseas Trade, merchandise 1937:
Imports . . . . . 3,196,200,000 francs
Exports . . . . . 3,618,800,000 ,,
Communications, 1936:
Roads: national, 7,160 km; departmental, 65,111 km
Railways. 4,939 km.

Finance:	*Northern Territory*	*Southern Territory*
Revenue (1936)	1,715,766,556 francs	27,137,525 francs
Expenditure ,,	1,715,709,617 ,,	27,077,033 ,,

Education 1935–36 (primary):
Schools: 1,258 European, 832 Mohammedan; scholars, 147,329.
Motor Vehicles licensed (Jan 1, 1937): motor-cars, 102,836; commercial vehicles, 17,609, motor-cycles, 11,199.

ALIMENTARY SYSTEM, DISORDERS OF. Under this heading are treated certain disorders which are of particular interest because of the frequency with which they are encountered in all parts of the world.

Gastroscopy. Among the instruments discovered in the surgeon's house at Pompeii was a speculum for examining the interior of the rectum. Perhaps the most important advance in gastro-enterology of recent years is the invention by Schindler of a flexible gastroscope, by means of which the interior of the stomach can be inspected with complete safety and with a minimum of discomfort to the patient. Whereas the X-rays had made it possible to recognize the deformities of the stomach caused by ulcers and growths, the new method has revealed for the first time the changes in the mucous membrane caused by gastritis, and has provided a means of recognizing ulcers and growths so small that they may escape discovery with the X-rays. Many patients who would formerly have been diagnosed as suffering from "nervous dyspepsia" are now known to have an organic basis for their symptoms in the form of gastritis. As malignant disease never develops in a healthy stomach, the early recognition of chronic gastritis and chronic gastric ulcer and their adequate treatment, followed by the institution of a simple regime to prevent recurrence, may be regarded as constituting a real prophylatic treatment of cancer. The importance needs no emphasis when it is remembered that in Great Britain alone about 15,000 people die every year from cancer of the stomach.

It has long been known that aspirin causes digestive symptoms in many people. Gastroscopic observations have shown that this is due to the production of acute inflammation of the mucous membrane in immediate contact with swallowed particles of the drug, which may even give rise in exceptionally susceptible individuals to severe hæmorrhage. The moral to be drawn is that aspirin should always be taken in a finely divided form with plenty of water, and that it should be avoided by all patients who have at any time suffered from ulcer or other gastric disorder.

Alkalosis. Many gastric disorders, including ulcer, are associated with a high acidity of the gastric juice. The symptoms can often be temporarily relieved by alkalis, although the underlying condition remains unaffected. As most disorders of this kind are very chronic, patients often continue to take alkaline powders in large doses for very long periods. The excessive consumption of alkali may eventually lead to the development of an alkaline condition of the blood, which causes headache, loss of appetite, irritability, and other symptoms, though these are rarely recognized as being the result of "alkalosis". The patient may continue to dose himself with his favourite brand of powder until finally he develops such severe symptoms as convulsions and coma, which may even prove fatal, though they are likely to be mistaken for the result of the "uræmia" of latent kidney disease by a doctor who is unaware that the patient has been poisoning himself for years with alkalis. Steps should be taken to control the extensive advertising of these alkaline powders without any warning of their potential dangers. Fortunately, a quite harmless and equally effective substitute has recently been introduced in the form of magnesium trisilicate. Still more important is the recognition that the correction of such common causes of indigestion as septic teeth, inefficient dental plates, irregular and hurried meals, "chain smoking" and excessive consumption of alcohol, especially in the form of cocktails or other strong drinks on an empty stomach, together with the prescription of a simple diet will often make the use of drugs of any kind unnecessary.

Intestinal Auto-intoxication. The conception of poisoning by products of bacterial activity in the bowel—auto-intoxication—is very widespread. The last few years have confirmed the belief long held by many authorities that this conception has no scientific foundation. It is now recognized that the symptoms which are often ascribed to constipation are really the result of the toxæmia caused by the artificial diarrhoea, which is produced by drugs taken by the patient for his supposed auto-intoxication. Intestinal lavage for a hypothetical poisoning from the bowel is almost equally harmful, and it has the additional ill-effect of making a patient, often already too introspective, still more hypochondriacal. Constipation itself produces no serious toxic symptoms. Its unpleasant effects can be overcome by regular habits, a suitable diet, and the administration of liquid paraffin or unirritating vegetable mucilages, which increase the bulk and soften the fæces, and thus render them more easy to expel.

The Stomach and Blood Formation. One of the most remarkable recent developments in physiology has been the recognition that the stomach not only secretes a juice containing hydrochloric acid and pepsin which digests proteins, but also produces ferments, hæmopoietin, and neuropoietin, which react with certain constituents of the food to form substances which are stored in the liver and act as the stimulants required respectively for the normal production of blood and the nutrition of the central nervous system. Pernicious anæmia, which had been regarded as "idiopathic" since it was first described by Addison a century ago, and subacute combined degeneration of the spinal cord, are now known to result from inflammation or atrophy of that part of the gastric mucous membrane which secretes hæmopoietin and neuropoietin. This explains why these diseases can be cured by the administration of dried stomach and by liver extract. (A. F. H.)

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AMBASSADORS AND MINISTERS (GREAT BRITAIN):

(*A.* = Ambassador; *E* = Envoy-Extraordinary; *M.-P.* = Minister-Plenipotentiary; *M.-R.* = Minister Resident; *Ch. d'A.* = Chargé d'Affaires, *C.-G.* = Consul-General; *C.* = Consul)

Country	To Great Britain	From Great Britain
AFGHANISTAN	Ali Mohammad Khan (*E*, *M.-P.*), 1933	Lt.-Col. Sir W. K. Fraser-Tytler, K.B.E., C.M.G. (*E.*, *M.-P.*), 1935
ALBANIA	M. Lec Kurti (*E.*, *M.-P.*), 1936	Sir A. Ryan, K.B.E. (*E.*, *M.-P.*, *C.-G.*), 1936
ARGENTINA	Sr. Dr Don Tomás A. Le Breton (A) 1938	Sir Esmond Ovey, K.C.M.G. (*A.*), 1937
BELGIUM	Baron E. de Cartier de Marchienne, G.C.V.O., G.B.E. (*A.*), 1927	Rt. Hon. Sir Robert H. Clive, G.C.M.G. (*A.*), 1937
BOLIVIA	Sr. Don Antenor Patiño	E. C. D. Rawlins, C.M.G. (*E.*, *M.-P.*, *C.-G.*), 1937
BRAZIL	Sr. Raul Régis de Oliveira, G.C.V.O., G.B.E. (*A.*), 1924	Sir Hugh Gurney, K.C.M.G. (*A.*), 1935
BULGARIA	M. Nicholas Momtchiloff (*E*, *M.-P.*), 1938	G. W. Rendell, C.M.G. (*E.*, *M.-P.*), 1938
CHILE	Sr. Don Luis Adolfo Renard (*Ch d'A.*)	Sir C. H. Bentinck, K.C.M.G. (*A.*), 1936
CHINA	Mr Quo Tai-chi (*A.*), 1932	Sir Archibald Clark Kerr, K.C.M.G. (*A.*), 1938
COLOMBIA	Sr. Don Luis Tamayo (*E.*, *M.-P.*)	M. B. T. Paske-Smith, C.B.E. (*E.*, *M.-P.*), 1934
COSTA RICA	(*Vacant*)	F. E. F. Adam (*E.*, *M.-P.*), 1934
CUBA	Sr. Don Guillermo de Blanck (*E.*, *M.-P.*), 1937	H. A. Grant-Watson, C.M.G. (*E.*, *M.-P.*), 1936
CZECHOSLOVAKIA	M. Karel Lisický (*Ch. d'A.*)	Sir B. C. Newton, K.C.M.G. (*E.*, *M.-P.*, *C.-G.*), 1936
DENMARK	Count Eduard Reventlow (*E.*, *M.-P.*), 1937	Hon. Sir P. W. M. Ramsay, K.C.M.G. (*E.*, *M.-P.*), 1935
DOMINICAN REPUBLIC	Sr. Don M. Henriquez-Ureña (*E.*, *M.-P.*), 1935	A. S. Paterson (*M.-P.*, *C.*), 1935
ECUADOR	Sr. Dr. Don Antonio Quevedo (*Ch. d'A.*, *C.-G.*), 1937	C. H. Bullock (*E.*, *M.-P.*), 1937
EGYPT	Hassan Nashat Pasha (*A.*), 1938	Sir Miles Lampson, G.C.M.G. (*A.*), 1936
ESTONIA	M. August Schmidt (*E.*, *M.-P.*), 1934	C. W. Orde, C.M.G. (*E.*, *M.-P.*), 1937
FINLAND	M. Georg Gripenberg (*E.*, *M.-P.*), 1933	T. M. Snow, C.M.G. (*E*, *M.-P.*), 1936
FRANCE	M. Charles Corbin, G.C.V.O. (*A.*), 1933	Rt. Hon. Sir Eric Phipps, G.C.M.G. (*A.*), 1937
GERMANY	Dr. Herbert von Dirksen (*A.*), 1938	Rt. Hon. Sir Nevile M. Henderson, G.C.M.G. (*A.*), 1937
GREECE	M. Charalambos Simopoulos (*E.*, *M.-P.*), 1934	Sir S. P. P. Waterlow, K.C.M.G. (*E.*, *M.-P.*), 1933
GUATEMALA	Sr. Dr. Don Francisco A. Figueroa (*Ch. d'A.*)	A. S. Fordham (*Ch d'A*)
HAITI	M. Léon Defly (*M.-R.*), 1937	W. R. Mackness (*M.-R.*, *C.*), 1937
HONDURAS	(*Vacant*)	A. S. Fordham (*Ch. d'A*)
HUNGARY	M. George de Barcza (*E.*, *M.-P.*), 1938	Sir G. G. Knox, K.C.M.G. (*E.*, *M.-P.*, *C.-G.*), 1935
IRAN	Mr. Fuzlollah Nabil (*Ch. d'A. ad int.*)	H. J. Seymour, C.M.G. (*E.*, *M.-P.*), 1936
'IRAQ	Sayid Raou al Chadirji (*E.*, *M.-P.*), 1937	Sir M. Peterson K.C.M.G. (*A.*), 1938
ITALY	Count Dino Grandi (*A.*), 1932	The Earl of Perth, G.C.M.G. (*A.*), 1933
JAPAN	Mr. Mamoru Shigemitsu (*A.*), 1938	Rt. Hon. Sir Robert L. Craigie, K.C.M.G. (*A.*), 1937
LATVIA	M. Charles Zarine (*E.*, *M.-P.*), 1933	C. W. Orde, C.M.G. (*E.*, *M.-P.*), 1937
LIBERIA	Baron Robert Aernout de Lynden (*M.-R*), 1938	A. E. Yapp (*Ch. d'A.*)
LITHUANIA	M. Bronius Balutis (*E.*, *M.P.*), 1934	C. W. Orde, C.M.G. (*E.*, *M.-P.*), 1937
LUXEMBURG	(*Vacant*)	Rt. Hon. Sir Robert H. Clive, G.C.M.G. (*E.*, *M.-P.*), 1937
MEXICO	. . . . .	. . . . .
NEPAL	Lt.-Gen. Krishna Shumshere Jung Bahadur Rana, K.B.E. (*E.*, *M.-P.*), 1935	Lt.-Col. G. L. Betham, C.I.E., M.C. (*E.*, *M.-P.*), 1938
NETHERLANDS	Count John de Limburg Stirum (*E.*, *M.-P.*), 1937	Sir N. Bland, K.C.V.O., C.M.G. (*E.*, *M.-P.*), 1938
NICARAGUA	Sr. Dr. Don C. Herdocia (*E.*, *M.-P.*)	A. S. Fordham (*Ch. d'A*)
NORWAY	Mr. Erik Andreas Colban (*E.*, *M.-P.*), 1934	Sir Cecil F. J. Dormer, K.C.M.G. (*E.*, *M.-P.*), 1934
PANAMA	Sr. Dr. Don Arnulfo Arias (*E.*, *M.-P.*), 1937	F. E. F. Adam, C.M.G. (*E.*, *M.-P.*, *C.-G.*), 1934
PARAGUAY	Sr. Dr. Don Rogelio Espinoza (*Ch. d'A. ad int.*)	Sir Esmond Ovey, K.C.M.G. (*E.*, *M.-P.*), 1937
PERU	Sr. Don Alfredo Benavides (*E.*, *M.-P.*), 1933	V. C. W. Forbes (*E.*, *M.-P.*), 1934
POLAND	Count Edward Raczyński (*A.*), 1934	Sir H. W. Kennard, K.C.M.G. (*A.*), 1935
PORTUGAL	Sr. Dr. Armindo Rodrigues de Ittau Monteiro (*A.*), 1937	Sir Walford H. M. Selby, K.C.M.G. (*A.*), 1937
RUMANIA	M. V. V. Tilea, C.B.E. (*E.*, *M.-P.*), 1939	Sir R. H. Hoare, K.C.M.G. (*E.*, *M.-P.*), 1934
SALVADOR	(*Vacant*)	A. S. Fordham (*Ch. d'A.*)
SAUDI ARABIA	Sheikh Hafiz Wahba (*E.*, *M.-P.*), 1930	Sir R. W. Bullard, K.C.M.G. (*E.*, *M.-P.*), 1936
SIAM	Phya Rajawangsan, C.B.E. (*E.*, *M.-P.*), 1935	Sir J. Crosby, K.B.E. (*E.*, *M.-P.*), 1934
SPAIN	Sr. Don Pablo de Azcárate y Flórez (*A.*), 1936	O. St. C. O'Malley, C.M.G. (*Ch. d'A.*)
SWEDEN	M. Björn Gustaf Prytz (*E.*, *M.-P.*), 1938	Sir E. St. J. D. J. Monson, Bt., K.C.M.G. (*E.*, *M.-P.*), 1937
SWITZERLAND	M. Charles R. Paravicini (*E.*, *M.-P.*), 1919	Sir G. R. Warner, K.C.V.O. (*E.*, *M.-P.*), 1935
TURKEY	Dr. Tevsik Rüştü Aras (*A.*), 1939	Rt. Hon. Sir P. Loraine, Bt., G.C.M.G. (*A.*), 1933
URUGUAY	(*Vacant*)	E. Millington Drake, C.M.G. (*E.*, *M.-P.*), 1933
U.S.A.	The Hon. Joseph P. Kennedy (*A.*), 1938	Rt. Hon. Sir Ronald Lindsay, G.C.M.G. (*A.*), 1930
U.S.S.R.	I. M. Maisky (*A.*), 1932	Sir. W. Seeds, K.C.M.G. (*A.*), 1938
VATICAN	(*Vacant*)	F. D'A. G. Osborne, C.M.G. (*E.*, *M.-P.*), 1935
VENEZUELA	Sr. Dr. Alejandro Lara (*E.*, *M.-P.*), 1936	E. F. Gye, C.M.G. (*E.*, *M.-P.*), 1936
YUGOSLAVIA	M. Dragomir Kissidolatz (*E.*, *M.-P.*), 1937	Sir R. H. Campbell, K.C.M.G. (*E.*, *M.-P.*), 1935

AMERICAN FEDERATION OF LABOR, senior of the two great rival United States Labour organizations, was formed at Columbus, Ohio, in 1881, and on Aug. 31, 1938, consisted of 102 national and international unions, 1,517 local trade unions in the United States and Canada, 49 State federations, and 792 city central bodies, with a membership of 3,623,087. It lost a membership of approximately 1,000,000 in 1936, when it suspended the Committee for Industrial Organization unions, but during the following year the Federation redoubled its organization efforts, and regained in new members most of the C.I.O. loss. The president of the American Federation of Labor is William Green, a former coal miner and former official of the United Mine Workers of America. He was elected president Dec. 19, 1924.

The financial report of the Federation, beginning Sept. 1, 1937, and ending Aug. 31, 1938, showed that the balance on hand, Aug. 31, 1937, was $586,567.41; the total receipts for the twelve months ending Aug. 31, 1938, were $1,844,203.37 and the total expenses for the same period were $1,987,139.59, leaving a balance in hand Aug. 31, 1938, of $443,631.19. (*See* also CONGRESS OF INDUSTRIAL ORGANIZATIONS; TRADE UNIONS, STRIKES AND LOCKOUTS, UNITED STATES; LABOUR.)

AMERICAN LITERATURE. "Average" is perhaps the best word with which to summarize the contributions of the year 1938 to American literary history. A due quota of good books in various fields was published, about the expected number of talented new-comers appeared in fiction and elsewhere, there were no notable shifts in established reputations, and only one striking loss by death, that of the novelist Thomas Wolfe.

In the more creative phases of writing, such as fiction, poetry, and, to a lesser degree, biography, no noticeable new trends were seen. The historical novel continued to dominate the best-seller lists, and even appeared to be increasing its hold on the popular interest, although it had relatively little competition from other classes of fiction. Women, too, continued to write most of the best-sellers.

The most popular novel of the year was Marjorie Rawlings' *The Yearling*, a simple story of a boy's life in the Florida back-country. Laura Krey's *And Tell of Time*, a first novel, proved the continuing popularity of the Civil War and Reconstruction periods as literary material. The surprise best-seller of the year was Margaret Halsey's *With Malice Toward Some*, the acid and witty comments of a young American woman on the ways and customs of the English. No book of the year was more widely read and commented upon than this volume, which sprang from letters Miss Halsey sent back to friends during a stay in England.

Novels. In general, the established novelists did no better during the year than hold their own. Among the disappointments were Sinclair Lewis's *The Prodigal Parents*, a heavy-handed satire on the revolt of youth; Pearl S. Buck's *This Proud Heart*, an inconsequential story of a swollen feminine ego apparently mistaken by the author for genius; and Hervey Allen's *Action at Aquila*, a conventional Civil War romance lacking any of the romantic sweep and glamour of *Anthony Adverse*.

William Faulkner's *The Unvanquished*, a collection of short stories of the Sartoris family woven into a novel, won its author critical praise and new friends for the simplicity of the writing. Esther Forbes scored again with *The General's Lady*, a Revolutionary War novel slighter in theme than her fine *Paradise*, but exceptionally well done. Elizabeth Madox Roberts turned to a love story, with overtones, in her *Black is My True Love's Hair*, and gave it a distinction that has marked all her books, without the obscurity of *He Sent Forth a Raven*, its immediate predecessor. Branch Cabell swung back to an earlier period with *The King Was in the Counting House*. Josephine Lawrence kept easily to the high level of her "problem novels", bitterly realistic treatments of everyday phases of American life, with *Bow Down to Wood and Stone*. James Farrell was generally thought to have made an advance in *No Star Was Lost*, a continuation of his current book on life among the Irish of the Chicago slums.

John Steinbeck's collection of short stories, *The Long Valley*, contained some of the finest work to date of this talented young writer. Ernest Hemingway's contribution to the year's lists consisted of *The Fifth Column*, and *The First Forty-Nine Short Stories*, *The Fifth Column* being a war-time play laid in Madrid, and the short stories representing the author's complete work in this genre.

Among the new-comers to fiction, Allen Tate, already established as a poet and biographer, added a distinguished novel to the historical list with *The Fathers*, a Virginia story of Civil War days. The characterization was exceptional and the rhythmic prose beautiful without seeming strained or artificial. A woman writing under the pseudonym of Taylor Caldwell produced a widely read novel, *Dynasty of Death*, which told the story of a family of munitions makers, and impressed, despite certain weaknesses, by its panoramic narrative sweep and the timeliness of its subject.

Other noteworthy first novels included George R. Stewart's *East of the Giants*, a California pioneering story; Harold Sinclair's *American Years*, an account of the growth of a Middle Western village; and Evelyn Hanna's *Blackberry Winter*, another story of Georgia in the Civil War and Reconstruction periods. Wessell Smitter's *F.O.B. Detroit* was one of the few notable pieces of fiction of the year that dealt with contemporary problems: it told the story of an automobile factory workman who could not adjust himself to the assembly line. Dorothy Baker's *Young Man With a Horn* also came out of the contemporary scene, a strangely touching little story of the life and death of a swing-crazy musician.

Bertha Damon's *Grandma Called it Carnal*, based upon the author's close acquaintance with an actual New England grandmother who stood out against all new-fangled things, delighted many readers with its native humour and the sharpness of its portraits.

Biography. Carl Van Doren's long and detailed *Benjamin Franklin* was one of the most discussed books in this field. Other important works included an editing of the famous William H. Herndon papers on Abraham Lincoln, freely used in the past as basic biographical material, by Emanuel Hertz. Published as *The Hidden Lincoln*, this provided an invaluable close-up of a great man in his formative period. C. Van Woodward's *Tom Watson, Agrarian Rebel*, was a careful and thoughtful study of a prominent figure in the Populist movement of the 1890's, and threw light, not only on Watson and his significance, but upon many later developments in Southern politics. Harry Barnard's *Eagle Forgotten: The Life of John Peter Altgeld* revived the memory of a great American liberal with fairness and justice.

Philip C. Jessup's two-volume *Elihu Root* was another fine piece of work which combined history with a penetrating study of a personality, and William Allen White's *A Puritan in Babylon*; *The Story of Calvin Coolidge* was

not only the best interpretation of Coolidge yet made, but one of its author's most mature and finished books. Oscar Lewis's *The Big Four*, the story of the men who built the Central Pacific Railway, Huntington, Stanford, Hopkins, and Crocker, was a rich piece of Americana, filled with legendary material about one of the vital phases of the opening of the Far West.

Of the year's autobiographies, none attracted more attention than James A Farley's *Behind the Ballots*, in which Mr. Farley not only told of his own rise to power, but explained the principles of a practical politician with disarming candour.

As history and autobiography, the second and concluding volume of *The Letters of Henry Adams* ranked high. The period covered was between 1892 and 1918, and the careful editing of Worthington Chauncey Ford gave the final touch to one of the most important records of this kind available This was one of the year's books certain to survive, a permanent contribution to a nation's culture by a personality that would have been remarkable in any age or time *The Letters of Lincoln Steffens*, edited by Ella Winter (Mrs. Steffens) and Granville Hicks, was another collection of correspondence worthy of note, the honest and complete revelation of the mind of a modern liberal journalist, and a first-hand account of the significant events of his lifetime.

History. Notable among works of historical importance was a five-volume set of *The Public Papers and Addresses of Franklin D. Roosevelt*, with special introductions and explanatory notes by Mr. Roosevelt, a record covering the years between 1928 and 1936, and later to be completed. It was the first time so extensive a collection of official documents had ever been published during a President's term of office.

T. J. Wertenbaker launched the first volume of a new series to be called "The Founding of American Civilization", which was entitled *The Middle Colonies*. Warmly human in its approach, it emphasized the everyday details of life among the American nation's founders. Matthew Josephson's *The Politicos* was an excellent companion volume to his *The Robber Barons*, covering the 1865–96 period from the political angle, and making a fascinating, if appalling, record of graft, greed, and corruption during a period of epochal financial and industrial development. Robert Selph Henry, author of *The Story of the Confederacy*, produced *The Story of Reconstruction*, destined to be a source book for future workers, although somewhat over-detailed for the general reader.

The task of telling a continent's story through its rivers proceeded with two additions to the "Rivers of America" series, launched in 1937, Cecile Hulse Matschat's *Suwanee River: Strange Green Land*, and Struthers Burt's *Powder River: Let 'Er Buck*, a particularly lively account of the West in legend and history, which was generally received as the best volume of the series to date.

Poetry. Archibald MacLeish essayed a somewhat unsuccessful experiment in *Land of the Free*, in which he supplied the "sound-track" for a series of photographs of Americans caught in the depression. Although the poetry itself was often quite moving, it lost a good deal of its effectiveness because of the typographical arrangement of the book, and even without this handicap, would have done little to increase Mr. MacLeish's reputation.

With the exception of Leonard Bacon's *Bullinger Bound*, mainly an attack on the younger poets of the economic school, the other noteworthy volumes were mainly the work of writers just coming into recognition. These included Ben Belitt's *The Five-Fold Mesh*, August Derleth's *Hawk on the Wind*, and Frederick Prokosch's *The Carnival*, all lyric in tone, together with Robert Francis's *Valhalla and Other Poems* and Victor Starbuck's *Saul, King of Israel*, the first principally narrative, and the second a remarkable reconstruction of Biblical drama.

An autobiography of the greatest interest to lovers of poetry and of permanent value as a literary record was Harriet Monroe's *A Poet's Life: Seventy Years in a Changing World*, which told the story of the magazine "Poetry" from its inception to Miss Monroe's death. Eunice Tietjens's *The World at my Shoulder* served as a supplement to Miss Monroe's recollections because of its author's long association with the same magazine George F. Whicher's *This was a Poet*, a sane and scholarly biography and critical study of Emily Dickinson, was another important contribution to the poetry shelf.

Miscellaneous. In addition to Margaret Halsey's *With Malice Toward Some*, the books of a varied character that attracted the most attention included Anne Lindbergh's *Listen! The Wind*, Rear-Admiral Richard E. Byrd's *Alone*; Commander Edward Ellsberg's *Hell on Ice: The Saga of the Jeanette*, all in the field of adventure, and Dr. Arthur E Hertzler's *The Horse and Buggy Doctor*, a salty account of a country physician's life and philosophy. Mrs. Lindbergh wrote of air pioneering with beauty and distinction, Admiral Byrd told the dramatic story of his two months alone in the Antarctic, and Commander Ellsberg revived one of the heroic tales of early American Arctic exploration.

Other noteworthy publications were *The Evolution of Physics* by Albert Einstein and his co-worker, Leopold Infield; Lewis Mumford's *The Culture of Cities*, a detailed study of urban life pointing towards a solution of contemporary problems; *American Regionalism: A Cultural Historical Approach to National Integration*, an extension of Dr. Odum's regionalistic theories first applied to the southern United States; and Josephus Daniels' *A Southerner Discovers the South*, an attempt by a journalist and novelist to see the contemporary South clearly and to state its pressing social and economic problems. (H. Bl.)

ANÆMIA. In 1938, bone marrow studies (sternal puncture) have become a standard aid in the diagnosis of the type of anæmia. Red blood cell size has assumed primary importance in diagnosis, classification of anæmia, and treatment. "Tagged" (radio-activated) iron and phosphorus have been used in the study of metabolism of these substances in anæmia and leukemia. Hæmolysins have been demonstrated in the blood and in splenic extracts in hæmolytic anæmia. Additional studies on hæmopoietin, the gastric secretion which generates the precursor of liver extract, suggest that it is a proteolytic enzyme. Deficiency of this "intrinsic factor of Castle" may account for the macrocytic anæmia in some patients with gastric carcinoma. A hypoplastic anæmia is reported as characteristic of latent benzol poisoning.

A sterol extract of liver, shortening the coagulation time of blood, has been isolated. The use of moccasin snake venom has been extended in the treatment of bleeding due to capillary fragility, and fer-de-lance and similar venoms are used for local hæmostasis. Vitamin K is being tested as a hæmostatic in patients with jaundice.

The use of "blood banks", placental blood and cadaver blood for transfusions has received widespread application. Yeast and its derivatives have received extensive trial in the treatment of anæmia. Mucin, in large amounts, may

inhibit the intestinal absorption of iron in chronic hypochromic (iron deficiency) anæmia Ferrous iron has been found to produce maximal effects in relieving the anæmia in children, in doses smaller than required with ferric iron, without the use of copper.

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ANÆSTHETICS. Activity in the study of anæsthetics during the past year has been greater apparently on the scientific and experimental side than in purely clinical investigation. The actual administration has, in expert hands, now left little room for improvement, whether as regards the safety of the patient or as regards his comfort at the time and afterwards. Nevertheless, there is still a definite post-operative mortality for which anæsthetics are probably in part, if not chiefly, to blame. It is natural therefore that research should be directed to trying to discover the exact way in which anæsthetics act in the blood and on the tissues of the body. Such research may elucidate the unexplained fatalities, and such research can only be undertaken by laboratory workers, though best in close association with the practising anæsthetist. On such lines the barbituric compounds which now provide so many widely used anæsthetics—nembutal, evipan, pentothal, etc —have been the subject of much investigation. The blood content of barbiturates at different stages of narcosis has been inquired into and a rapid method of estimation evolved which enables speedy and sometimes life-saving intervention to be made. Also a number of animal experiments have been carried out to ascertain the part which various factors may play in enhancing the danger of barbituric poisoning; for it is known that in some instances, for reasons which are not yet clear, these drugs exert injurious if not fatal influences on the function of the liver. These researches appear to establish the fact that, at any rate in certain animals, cold, sepsis, fasting, bleeding, and certain operations can convert the action of an otherwise safe dose of barbiturate into one which greatly prolongs the narcosis, or in extreme instances leads to a fatal result.

A new barbituric compound, pentothal acid, has been introduced after three years' clinical and laboratory research. It is designed for use as a basal anæsthetic, and has the advantages that it can be given satisfactorily by the mouth and is more free than other barbiturates from the restlessness that is apt to follow narcosis due to these compounds. Another recently introduced compound, sodium thioethamyl, gives results indistinguishable from those of the well-established pentothal sodium.

A gas which has recently been employed in the service of anæsthetics is helium, the lightest known gas after hydrogen. Helium is not an anæsthetic, but by its low density it enables gaseous anæsthetics with which it is mixed to be breathed through constricted apertures in greater volume and with less effort on the patient's part than can the anæsthetic alone. Thus helium can be of great emergency value in patients who are suffering from some mechanical respiratory obstruction and require the administration of an anæsthetic. It is maintained also that the presence of an inert gas, helium, which is but slowly removed from the alveoli of the lung, can play an important part in preventing that collapse of the lung which is so formidable an effect in a certain proportion of instances after administration of cyclopropane and oxygen.

The search for drugs to combat shock, a problem often confronting the anæsthetist, has recently brought into being a synthetic amine isomeric with ephedrine. The value of the latter in circulatory collapse is well proven. The new product B- (p- oxyphenyl)—isopropylmethylamine is marketed as Veritol, and has an action similar to adrenaline in its low toxicity and to ephedrine in its long-continued effect and activity after oral administration. It should prove highly valuable. (J. Bd.)

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ANCIENT MONUMENTS. The number of monuments in Great Britain cared for by the Office of Works increased rapidly, and over 5,000, prehistoric to recent, are now under its charge. The restoration of The Hurlers, Cornwall, continued under Mr. Ralegh Radford, four more stones being found, which will be re-erected in their original positions. Excavations at Richborough Castle, Kent, revealed defensive works of A D. 43 and the subsequent use of the site for military stores. The London and North-Eastern Railway presented to the nation a piece of land in connexion with the excavations at Milecastle, Hadrian's Wall, so that the whole of Milecastle can be excavated: work is to begin in the spring. Marlborough House Chapel, the old "Queen's Chapel" of St. James's Palace, was readorned and restored during the year; Queen Mary attending the first service after the reopening, and having presented to her officials of the Office of Works who contributed to the readornment. At an exhibition at the Institute of Archæology of the University of London, held in May, the Office of Works showed pieces of mediæval carving from Thetford Priory, Norfolk.

At Clarendon Palace, near Salisbury, a thirteenth-century tile-kiln was discovered. It is the first mediæval kiln discovered not connected with a monastery. Probably the tiles used at Clarendon Palace were made on the spot. At Gainsborough, Lincs, the historic hall is to be preserved for the nation and adjacent land kept free of buildings. The London County Council marked with a plaque the house in Southampton Street, Pentonville, where Joseph Grimaldi, the famous clown, died in 1837. Other items of interest include the handing over by Lord Yarborough of Thornton Abbey, Lincs, to the Office of Works and the presentation to the nation of Kenilworth Castle by Lord



O. Salomon]
CLARENDON PALACE EXCAVATIONS, SHOWING STAIRS TO THE GREAT HALL AND THE KING'S KITCHEN IN FOREGROUND

Kenilworth; work has begun on the keep and other parts.

In Wales, preservation of the Roman town wall at Caerwent restarted and the courtyard of St. David's Bishop's Palace was cleared. Raglan Castle and a megalithic monument "Tinkinswood Burial Chamber" were placed in charge of the Office of Works.

In Scotland, Office of Works excavations continued in Orkney and prehistoric settlements were discovered at Jarlshof, Shetland. Work continued on several abbeys and at Moray and St Andrews Cathedrals. At Culross Palace, work was finished

Mr. Reginald Frances Joseph Fairlie was appointed a member of the Royal Commission on Ancient and Historical Monuments (Scotland), in succession to the late Dr. J. Graham Callander. (V. R.)

See *Regional Guide to Ancient Monuments, South Wales.*

ANDAMAN AND NICOBAR ISLANDS. These form a long series of summits of a submarine mountain range in the eastern part of the Bay of Bengal. Area 3,143 sq. miles; population 29,463. The natives are primitive Animist tribes, and cultivation among the forest-clad hills is sparse. Mr. C. F. Waterfall is Chief Commissioner for the islands. Transportation being no longer a judicial penalty in India, the penal settlement at Port Blair will gradually disappear. The chief exports of the islands are a variety of valuable timbers from Andaman and coco-nuts from Nicobar. (ME.)

ANDORRA. A republic in the eastern Pyrenees under the joint suzerainty of France and the Bishop of Urgel. Its chief products are oats, barley, vines, tobacco, sheep, iron and lead. A good road provides a link with Spain.

Area. 191 sq miles.
Population. 5,230.
Capital Town. Andorra la Vieja.
Language. Catalan.
Religion. Christian (Roman Catholic).
Imports from United Kingdom: in (1936) £1,000; (1937) £63.
Currency. French and Spanish legal tender.

ANGLICAN COMMUNION, THE. The year 1938 will long remain memorable in ecclesiastical annals as Bible Year and as the year of the publication of the Doctrinal Report. Both matters were of world-wide interest and of an importance even transcending the Anglican Communion, but the Doctrinal Report is the subject of a separate article, Archbishops' Commission (Doctrinal Report) (*q.v.*). (*See* also CHURCH OF ENGLAND, THE.)

400th Anniversary of the Open Bible. Throughout the Anglican Communion the year was observed as Bible Year in commemoration of the Royal Injunctions issued in 1538, through the Vicar-General, to all parochial clergy that they should each "provide one book of the whole Bible of the largest volume in English and the same set up in some convenient place within the said church that you have cure of, whereas your parishioners may most commodiously resort to the same and read it." These Injunctions ushered in what the *Manchester Guardian* described as "a new England." The whole of 1938 was Bible Year in memory of their results, but the special celebrations culminated on June 17 in a great National Service of Thanksgiving for the English Bible held in St. Paul's Cathedral. The Free Churches took part in the service, and the lessons were read by the Speaker of the House of Commons (Capt. E. A. FitzRoy) and the Lord President of the Council (Viscount Hailsham). It was perhaps not unfitting that in this year the Annual Report of the British and Foreign Bible Society should record the issue of a portion of the Scriptures in the 1,000th language (Sakata) into which they have been translated.

World Councils and Conferences. The Anglican Communion continued to take an active part in various world councils and conferences of the Churches. As a result of the Oxford and Edinburgh Conferences of 1937 plans were submitted to the Churches by a Conference of Churches, which met at Utrecht in May 1938, for a World Council of Churches to carry on the work of the two œcumenical movements "Faith and Order" and "Life and Work", and for other purposes which may be broadly summarized as the fostering of "œcumenical consciousness" and co-ordination with such movements as the World's Alliance of Young Men's Christian Associations, the World's Student Christian Federation, and the International Missionary Council. A constitution was approved and a provisional committee was set up under the chairmanship of the archbishop of York to carry out the recommendations. Most of the Provinces of the Anglican Communion were represented at a meeting of the International Missionary Council held in the late autumn at Tambaram, Madras.

Losses by Death. Among the losses through death, mention must first be made of the Most Rev. C. F. D'Arcy, archbishop of Armagh and Primate of All Ireland, perhaps the most outstanding Christian thinker of his day on the philosophical relations of science and religion. Other losses included Dr. D'Arcy's successor, the Most Rev. J. G. F. Day; the Most Rev. F. R Phelps, archbishop of Capetown; the great ecclesiastical lawyer, Sir Lewis T. Dibdin; and among theologians, Canon B. H. Streeter, Provost of Queen's College, Oxford, and the Right Rev. W. H. Frere, sometime bishop of Truro.

India. In the Church of India, Burma, and Ceylon, "mass movements" of conversion continued and progress was made in the creation of new dioceses. The revised scheme for Church union in South India was referred to the Central Consultative Body of the Lambeth Conference, which expressed the opinion that "except in regard to the new position of the bishops in the Synod, with reference to matters of Faith and Order, the changes introduced since 1930 are not such as to give ground for supposing that the Lambeth Conference of 1940 would wish to reconsider the general approval given in 1930."

Other Events. For the rest, it must suffice to record an increase of $1,450,822 in the 1937 contributions, published in 1938, to the Protestant Episcopal Church in the United States of America; considerable missionary activity on the part of the Irish, Australian, New Zealand, and South African Provinces; the dedication of a new cathedral in Cairo and of the American memorial to King George V in Winchester Cathedral; new hopes of greater unity in the scattered Province of the West Indies; and the resumption of Empire migration under the Church of England Advisory Council of Empire Settlement. In connexion with the last of these every member of the first large party to sail for New South Wales received a warm personal message of encouragement from Queen Mary. Finally, all Provinces and jurisdictions of the Anglican Communion responded to the Call to Prayer issued by the archbishop of Canterbury in the international crisis of Sept. 1938. (R. S.)

United States. The year 1938 has seen no important changes or events in the sphere of administration or of organization in the Protestant Episcopal Church, the American branch of the Anglican Communion, but it has brought deep experiences in the spiritual sphere.

Among the chief activities were the continuance of the

Forward Movement for the spiritual strengthening of the Church; the participation of the Episcopal Church in movements looking towards Christian Unity, without compromise of those principles of Faith and Order which are essential to the life of the Church, and continued effort to maintain the Church's missionary work in spite of financial stress at home and the tragic effects of war in some of the missionary fields abroad

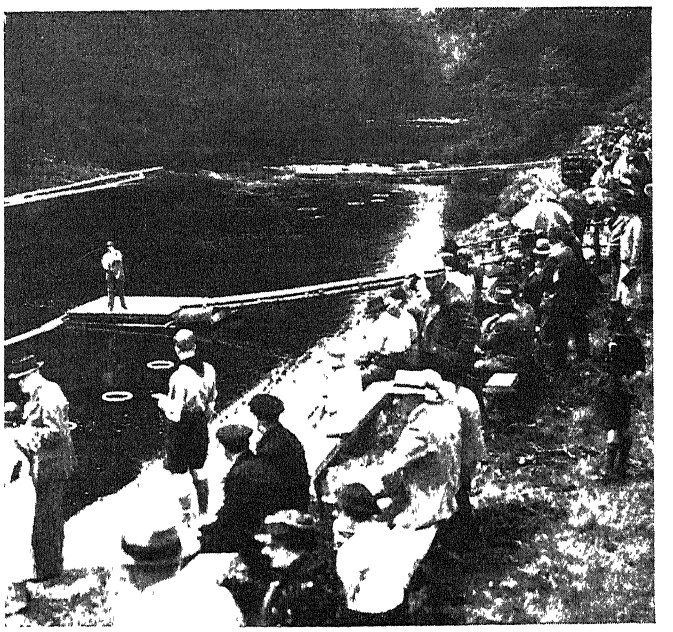
The continued financial depression made the year 1938 an exceedingly difficult one, perhaps the most difficult yet, for the raising of funds for religious, social, and charitable purposes. The statistics show, however, some increase in contributions, and they show also an increase over the preceding year in the number of persons confirmed, and in the total membership of the Church. The records show a total number of 2,110,473 baptized persons, of which number 1,439,968 are communicants.

But the outstanding matter in 1938 was the spiritual stirring of the Church by conditions in this world, and by events and acts such as few would have believed to be possible. The efforts of some governments to destroy religion and to abolish human freedom, the reversion in some countries to barbarism and to almost incredible racial and religious persecution, have challenged the faith of Christians everywhere, and to the poignancy of this situation has been added the imminent threat of world war. That appalling possibility—by no means yet removed—brought men and women to their knees in prayer, and awakened in many a realization of their spiritual need. In the Episcopal Church this stirring of the Spirit has been observable in a deepened note of spiritual earnestness, in a call for fuller faith in Christ and for greater faithfulness to Him, and in a greater readiness to seek the spiritual helps and means of grace which the Church offers. In many places church attendance has shown definite increase. No one can say how great the effects of this spiritual awakening may be, but one of its evidences is a strong Youth Movement, now widely in progress, which is making its own vital and indispensable contribution to the life of the Church. (W. T. M.)

ANGLING. Anglers in Great Britain enjoyed a better season in 1938 than in 1937; there is an increase of over 8,000 in the membership of the National Federation, while the Trent and Severn Fishery Boards alone issue over 173,000 rod licences. The Diseases of Fish Act and Public Health (Drainage of Trade Premises) Act, the latter of which came into force in July, have helped angling by encouraging purer conditions in waterways in industrial areas.

The 29th annual All England championship was won in the Bedfordshire Ouse by Hull and District, who, with 38 lb. 12 oz. 7 dr., led last year's winners (Grove and Whitnall) by 12 oz. 2 dr. only; the largest individual catch was G. Bright's (Bristol and West of England) 21 lb. 13 oz. 8 dr. A world record sea-trout (29 lb. 2 oz.) was caught on the fly in the Em, Sweden, in September, and in the same month, a record roach (3 lb. 14 oz.) in a M.W.B. reservoir at Molesey; trout anglers had a record season on Loch Leven, 57,884 trout (46,723 lb.) being taken as compared with 22,786 in 1937. It is of interest to note that trout from Scottish and West of England rivers have been successfully introduced into the tropical rivers of the Malay States, only 400 miles from the Equator.

Salt-water angling was well up to standard and many notable fish were recorded. Off Scarborough Capt. C. H. Frisby, V.C., broke all records for a day's catch of tunny with five fish totalling 2,812 lb. (about 1¼ tons), beating



Sport & General]
THE USK VALLEY CASTING TOURNAMENT AT GLANUSK PARK, CRICKHOWELL, BRECONSHIRE, SOUTH WALES

the previous best one-day catch by approximately ¾ ton, and among other notable captures were: 13½-lb. bass at Coverack; john dory of 8 lb. 1 oz. (Mount's Bay); thresher shark of 120 lb. (Boscombe); 32-lb. cod (Ballycotton); and a plaice of 6 lb. off Gairloch. A record pollack of 22 lb. was taken in a net off Coverack, and a 40-lb. conger hooked off Budleigh Salterton. The best day's catch of general fish was made off Ballycotton by K. Fuller and L. Buttriss and scaled 642 lb. Tope fishing did not reach the level of 1937, though several tope of over 40 lb. were recorded.

America. The following world's records in salt-water fishing were made: a 215-lb. sailfish was caught on Sept. 20 off Acapulco by Albert B. Pullen, of Mexico City; a 161-lb. white marlin was caught off Miami on March 21; and on Sept. 4 a blue-fin tunny, weighing 864 lb., was landed by F. Alfred Kenney, near Jordan Bay, Nova Scotia.

In the international tunny matches held in August at Liverpool, Nova Scotia, Cuba was first with 5½ points, followed by U.S.A. 3 points, and Great Britain, the former champions, with half a point. The all-round championship in the international casting matches held in Paris was won by Marvin Hedge, of Portland, Oregon.

ANGLO-EGYPTIAN SUDAN. Compared with the preceding year 1938 was relatively uneventful. The reorganization of the provincial administration, which started to come into force in 1937, was continued and has proved an undoubted success. Public security was also undisturbed throughout the country.

In the course of the discussions between the Egyptian prime minister, Mohamed Mahmud Pasha, and the Foreign Office in London during the summer, the question of the Egyptian subvention of £Eg.750,000 to the Sudan was raised, and as a result of subsequent conversations between the Financial Secretary of the Sudan government and the Egyptian ministry of finance it was agreed that the amount should be reduced to £Eg.500,000 for 1938, that in 1939 it should be only £Eg.250,000, and that thenceforward it should be abolished altogether.

A permanent exhibition of Egyptian products has been established in Khartoum as a result of the visit of Egyptian economic and commercial exports, and in Egypt a perma-

State Service. The change over has proceeded practically without a hitch and the practising members of the veterinary profession are working loyally with their government colleagues towards the end in view

Tuberculosis of cattle has been the first disease to be added to the schedule, but statistics are being steadily compiled in regard to others, especially contagious abortion, Johne's disease, and mastitis. These diseases, whose losses by the aftermath of damage which they cause to farm stock cost the breeder and dairyman many millions of pounds a year, will inevitably come forward as soon as the favourable opportunity arises.

Notwithstanding the fact that 1938 has been a troublesome and very anxious year, Great Britain is still the envy of the world in regard to the success with which the veterinary department keeps control over foot and mouth disease; and the fact that during 1937 two dogs developed rabies whilst, providentially, detained in quarantine, is practical evidence of the wisdom of the law which compels owners who wish to import dogs and cats to hand them over to government quarantine kennels for a minimum period of six months

The continued absence of glanders from the horses of our country may also be quoted as a triumph of veterinary scientific control.

In the *Report of Proceedings under the Diseases of Animals Act* for the year 1937, issued by the Ministry of Agriculture and Fisheries, it is stated that there are in Great Britain 1,004,686 horses, 7,909,126 cattle, 24,712,054 sheep, 3,882,591 pigs, and 2,932,612 dogs.

Amongst these, of the specialized diseases which have to be compulsorily reported the official numbers of outbreaks reported are as follows:

Anthrax, 743, involving 879 animals, of which 820 were cattle.

Foot and Mouth Disease, 187 outbreaks, involving the slaughter of 9,326 cattle, 15,455 sheep, 6,795 pigs and 10 goats; for which the owner received fair compensation.

Parasitic Mange, 115 outbreaks, all in horses, of which some 179 animals were infected.

Sheep Scab, 253 outbreaks; and *Swine Fever*, 982 outbreaks, for assistance in the diagnosis of which some 584 pigs were slaughtered.

Of the above diseases the numbers of outbreaks of Anthrax and Foot and Mouth exceeded those of each of the previous four years, whilst the statistics of parasitic mange, sheep scab, and swine fever showed very gratifying diminutions.

No outbreaks of cattle plague have been reported since 1877; of epizootic lymphagitis since 1906; of glanders (including farcy) since 1928; of pleuro-pneumonia since 1898; of rabies since 1922; of sheep-pox since 1850. No case of fowl pest has been confirmed in Great Britain since Jan. 11, 1937, the date from which the disease was first notifiable. No case of fowl pest has been known to exist in Great Britain since 1933. These facts are all tributes to the effectiveness of the advice given by the Veterinary Service of the Ministry of Agriculture and the thorough manner in which the instructions are carried out by the lay staff and the police authorities.

The subject of poultry diseases must not be forgotten, for those which are preventable have been publicly stated, as already mentioned, to cost the poultry owners no less than four million pounds annually; and one has only to read any poultry paper to realize the terrible plight to which the poultry industry has been reduced—mostly through neglect of disease at its onset in the past. Poultry diseases are at last receiving government attention, and the Ministry's laboratory and research station at Weybridge has recently had numerous additions to its buildings and its staff for this special research. (F T. G H)

ANNAM: *see* FRENCH INDO-CHINA.

ANTHROPOLOGY. During 1938 the destinies of Anthropology became inextricably bound up with the rapid course of historical events. Some political systems, which have established an exclusive monopoly in the control of views and principles, have also adopted clear-cut anthropological doctrines: the supremacy of the "Aryan" or "Nordic" race, the founding of nationalism in the realization of "blood and soil", the conception of culture as being indefinitely plastic and capable of direction by centralized control.

The German occupation of Austria has thus led to a change in the personnel of the Department of Anthropology at Vienna, and to the uprooting of psychoanalytic research in ethnological problems. The publication of such journals as *Anthropos* and *Imago* will no doubt continue, but from some other centre. The spread of German influence bids fair to introduce into various countries of Central and Eastern Europe the specific points of view on race and nationality held by National Socialism. It can be noted already in international gatherings that the German language is becoming more and more extensively adopted at the expense of English and French. Recently also the Italian regime has been trying to impose the anti-Semitic outlook on its subjects and a number of savants have provided an "anthropological philosophy" to support this movement.

The military invasion of China by the Japanese must also influence anthropological studies, especially those of a cultural and sociological nature. Anthropological work in China, led by such scholars as Weidenreich, Shirokogorov, Wu Wen-tsao, and R. Fortune will, it is hoped, continue in spite of the new difficulties. In Japan the influence of German anthropological doctrines is on the up-grade, and the German language is being used more and more in books and journals.

Russia is adopting, especially as regards cultural anthropology, an attitude of non-co-operation. Thus there was no response to the various private and official invitations to participate in the International Congress at Copenhagen.

The International Congress of Anthropological and Ethnological Sciences held its second session in Copenhagen during 1938. The large attendance, the scope and value of the contributions, and the liveliness of the discussions at this Congress manifested its vitality and its interest in the study of Man. Thirty-eight countries were represented, subscriptions were well over 700, and most subscribers were in personal attendance. Nevertheless, a somewhat antiquated perspective was introduced into the work of the Congress by the lumping into one section each of Social Anthropology and Religion, and of European Ethnology and Prehistory; the lack of special sections for field-work and theory; and the omission of such differential studies as primitive jurisprudence, economics, education, as well as of applied anthropology.

Professor A. W. Brögger, of Oslo, expressed the general feeling at the inaugural session when he pointed out that, living in the savagery of modern civilization, the European might learn a good deal from the study of the civilizations of "savages".

In the session on Race, H. J. Fleure, Rolf Nordenstreng, and B. Škerlj discussed the concept of human race, showing

how difficult its definition is even from the anatomical and biological point of view, not to speak of attributing to race any cultural or psychological values

Professor E. Fischer, in a paper on race and the inheritance of spiritual characteristics, attempted to introduce some principle of gradation or evaluation of racial features. In the discussion following, Professor M. Herskovits maintained that it is not possible scientifically to measure or even to assess values and characters as regards race.

Among the joint sessions, the lecture of Dr Sylvanus G. Morley, " A Review of Twenty-Five Years' Research in the Maya Area of Middle America by the Carnegie Institution of Washington " ; a public address by the great physicist, Dr Niels Bohr, on " The Relations between Rational Philosophy and Humanistic Studies " ; and films from Greenland interpreted by the Administrator of that country, J. Daugaard-Jensen, attracted general interest and contributed to the advancement of knowledge.

The Eighth Volta Meeting, organized by the Royal Academy of Italy, with an international attendance of invited guests, was held at Rome in October. The subject was Africa, considered from the point of view of many disciplines. Among the anthropological contributions may be mentioned those by Sir Claude Hollis on the Masai, Pater W. Schmidt on the Galla, J. Czekanowski on the racial strains among African populations, and of R. Thurnwald and B. Malinowski on culture contact and change. An interesting linguistic contribution was made by M M. Moreno on the contact of vernaculars and the literary languages of new indigenous Africa. G. Danielli read a paper on environment and culture in Africa ; J. Carcopino on the cultural achievements of the Berbers in historical perspective ; and M. Guidi on Islam and Christianity in relation to indigenous religions and cultures. Sig. Alessandro Lessona and Prince Leon Sapieha discussed the need for European solidarity in Africa, while Mr. Tracy Phillips pointed out the dangers, for the future of the colonizing Powers, of not considering indigenous interests. *See Proceedings of the Eighth Volta Congress* (1938).

Third International Congress of Phonetic Science. This was held at Ghent, and was attended by over 280 members. A special session on anthropological linguistics was held, in which Miss I. C. Ward, Professor D. Westermann, Professor I. van Ginneken, Dr. R. Stopa, and Dr. P. de V. Pienaar took part. A special discussion was devoted to the subject of clicks, on which Dr. R. Stopa is one of the world experts The main event of the Congress was the foundation of an International Society of Phonetic Science, with Professor Daniel Jones of London as first president.

Lord Hailey's African Survey. To the anthropologist this survey—which is international in character, for it refers to French, Belgian, Italian, Portuguese, as well as British colonies—will be of special interest, because the science of Man occupies in it a dominant place. Of the twenty-five chapters in the book, some sixteen would have been impossible without the African ethnographic field-work on which they are largely based.

Lord Hailey throughout recognizes that research in natural or physical sciences is insufficient without the anthropological or sociological approach. The author is equally clear and precise in recognizing that to keep apart " pure " and " practical " research is as futile as it is meaningless. He tells us that " it has more than once happened in Africa itself, that a study which appeared entirely theoretical has unexpectedly revealed facts of immediate and very practical use ". In no other science is this principle as necessary as in anthropology, where again and again advocates of academic detachment and of " pure scientific attitudes " still try to combat the development of applied or practical anthropology.

The International Institute of African Languages and Cultures has been for the past ten years stimulating and sponsoring work in practical or applied, as well as theoretical, anthropology, and linguistics. It has to its credit the production of a team of experts in field-work and theory : Professor I Schapera of Capetown ; Dr. A. I. Richards, Lecturer at Johannesburg ; Mr. Godfrey Wilson, Director of the Rhodes-Livingstone Institute in Northern Rhodesia ; Mrs. Godfrey Wilson (Monica Hunter), whose book *Reaction to Conquest* is a standard work in culture contact ; Dr. Kalervo Oberg, with field-work among the Banyankole ; Dr. S. F. Nadel, who worked among the Nupe in northern Nigeria, and is now engaged in field-work among the Nuba in the Southern Sudan ; Dr. M. Fortes, with field-work among the Tale, now Lecturer at the London School of Economics ; Dr. Günther Wagner, with field-work among the Kavirondo ; Dr. Margaret Read, Lecturer at the London School of Economics, with field-work in Nyasaland ; and many others.

The Institute organized in 1938 a co-operative expedition for the study of nutritive problems in Nyasaland. The work is carried out by medical, nutritive, anthropological, and agricultural experts and government officers. Dr. Margaret Read has been sent out by the Institute to carry out the anthropological investigations, and Dr. B. S. C. Platt is in charge of the medical and nutritive research. The Institute had, some time ago, convened a special committee on nutritive research under the initiative of A. I. Richards and R. W. Firth. Memorandum XV, " Notes on the Study of Culture Contact in Africa ", contains seven articles, written, with one exception (Mr. and Mrs. Culwick), by former Fellows or Associates of the Institute (L. P. Mair, M. Hunter, I. Schapera, A. I. Richards, M. Fortes, and G. Wagner). In this memorandum some of the most important methodological and practical results of the field-work carried on in Africa under the auspices of the Institute are to be found.

The 1938 volume of *Africa*, the journal of the Institute, presents a new feature, the publication of supplements, which contained two important memoirs. Dr. M. Read writes on " Native Standards of Living and African Culture Change ". This is an analysis of one of the most important issues in culture change. It contains first-hand information on the new economic developments among the Ngoni, as well as an account of their old tribal economy. It contains a number of theoretical discussions and defines such concepts as " standard of living ", " economic improvement ", and " value ", most of which need redefinition in terms of field-work. The other supplement, written by M. Fortes on " The Social and Psychological Aspect of Education in Tale Land ", is an all-round study of training, growth, and development in a West African community.

Physical Anthropology and Human Prehistory. In these subjects research has in recent years been carried out on an international basis. In 1936 Weidenreich reported three new crania associated with *Sinanthropus* at Choukoutien near Peking, generally sinanthropoid in character, but with the Neanderthal type foreshadowed in them. From this, and from earlier and additional finds, Weidenreich concludes that *Sinanthropus* as a type was so variable as to represent a continuous line from a very primitive to a rather advanced human stage of development. (*Cf.* Weiden-

reich's papers published in *Paleontologica Sinica*, 1937–38) The findings and investigations in Java have been the subject of important studies by de Terra and von Konigswald, in which the geology of Java has been outlined and its relation to the Asiatic mainland clarified. In 1938 the third skull assigned to *Pithecanthropus* was found in Java, differing from the first two in that certain cranial characters show an approach towards *Sinanthropus*. Important discoveries of the last years by von Oppenoorth in the Ngandong zone (1932), by Kohl-Larsen at Lake Eyassi in East Africa in 1935, and by Broom in South Africa have led to the assumption of a form termed *Paranthropus robustus*. On the basis of this new material Broom assigns Taungs to Lower Pleistocene, Kromdrai to Middle, Sterkfontein to Upper. All these forms, plus Man, asserts Broom, arose from an African Pliocene form about 3,000,000 years ago.

In a preliminary report, Sir Arthur Keith and McCown recently described the skeletal remains from Mugharet es-Skhul and el-Tabun, referable to Levalloiso-Mousterian horizons.

In North America the problem of the " Folsom Complex " has been considered by Roberts, Howard, Antevs, McClintock, Shetrone, Bryan, and Harrington among others. In general it is agreed that the Folsom material dates to the pluvial period immediately following the retreat of the last glacier.

Complementing Kapper's résumé of the proto-historic and recent anthropology of the Near East, Krogman has reported on the crania excavated by the Oriental Institute at Alishar Hüyük, Anatolia, dating from before 3,000 B C. to the eighteenth century A.D. (*O. I. Publications*, vol xxx, pt. III, 1937).

An increasingly important phase of physical anthropology is the study of human growth. The anthropometry of growth is being supplemented by a study of maturation as revealed by the X-ray. A milestone in this newer approach is Todd's atlas of skeletal maturation in the hand (1937). The study of the adolescent child has been greatly facilitated by two recent monographs issued by the Society for Research in Child Development. The first is a *Handbook* by Greulich, Day, Lachman, Wolfe, and Shuttleworth ; the second an *Atlas* by Shuttleworth.

Professor E. A. Hooton of Harvard has published a new book, *Apes, Men, and Morons* (1938), following up his well-known work *Up from the Ape*. Written in a clear, incisive, and eminently readable style, both volumes are not merely excellent surveys of the present state of general anthropology for the lay reader, but constitute a real contribution towards the science of race and culture.

The study of cultural anthropology might better be discussed under the separate headings of the various countries.

Australia. The work is carried out mostly from the Department of Anthropology in the University of Sydney. A survey of this will be found in an article by A. P. Elkin, entitled " Anthropological Research in Australia and the Western Pacific, 1927–1937 ", in *Oceania*, vol. lxxx, 1937–38. M. F. Ashley-Montague contributes three important articles on subjects lying on the borderline between biological and cultural anthropology : " The Future of Australian Aborigines " ; " The Origin of Subincision in Australia " ; and an analysis of the " Infertility of the Unmarried in Primitive Societies ". In this last is given an explanation in biological terms of one of the most puzzling phenomena in general ethnology.

Belgium. Scientific work here largely centres around the Museum of the Belgian Congo at Tervuren, the Royal Colonial Institute, and the Royal Museum of Art and History The annual bibliography published by the Museum (*Bibliographie du Congo-Belge et des Régions Avoisinantes*) presents a useful picture of the numerous publications in anthropology, administrative studies, and other disciplines referring to the region. Professor Smets has returned from his expedition to Ruanda and Urundi and is publishing his materials. Professor F Olbrechts of Ghent is back from his recent field trip to Senegal, Sudan, and the Ivory Coast.

China. Work in this country has suffered from the vicissitudes of war. Some of the results, however, of field-work organized by Professor Wu Wen-tsao have already been published, notably a remarkable monograph by Dr. Fei Hsiao-tung, *Peasant Life in China* (1938), which contains a well-rounded description of family life, economic pursuits, and trade in a village community.

France. An event of the first magnitude for ethnographic development was the inauguration on June 20 of the *Musée de l'Homme* by the President of the Republic. It is the only great institution of its kind devoted exclusively to ethnographic collections, but embracing also most of the libraries, teaching institutions, and learned societies of the French capital. In this new museum, which was built on the site of the old Trocadero, the French Institute of Ethnology is already housed, and most of the teaching in the subject will be carried out there The old Museum of Physical Anthropology has moved from its old location at the *Jardin des Plantes* with all its collections and books.

In the other wing of the new Trocadero, the sister museum of French folklore (*Musée National des Arts et Traditions Populaires*) is now being organized, and it is expected that its inauguration will take place in June 1939. This museum will contain, on the one hand, the creations of French artistic genius in historical perspective, and on the other, exhibits of folk implements, constructions, and houses.

The credit for the total achievement must primarily be given to the energy and organizing talent of Dr. Paul Rivet. The *Musée de l'Homme* is now under the direction of J. Soustelle ; and the folklore museum is being developed by Georges Henri Rivière and André Varagnac, who were primarily responsible for the organization of the First International Congress of Folklore, held in Paris in the summer of 1937, the proceedings of which have now been published as *Travaux du Ier Congrès International du Folklore*. M. Van Gennep is publishing a year-book (*Manuel de Folklore Français contemporain*), of which two volumes (Nos. 3 and 4) have already appeared.

M. André Varagnac is the organizer and leader in an important enterprise : *Les Journées de Synthèse Historique*, in which the fundamental problems of humanistic science are being discussed on an international basis and with reference to various social sciences, including ethnology, folklore, and linguistics. The French work on folklore is now carried on in close collaboration with students of other countries, notably of Scandinavia. M Rivière and M. Varagnac are members of the editorial committee of *Folk-Liv*.

Of the important books which appeared in 1938 as publications of the Institute of Ethnology, we might mention the following : Marcel Griaule, *Masques et Jeux Dogons* ; Ferghali, *Proverbes syro-libanais* ; Mgr. Grebaut, *Catalogue des manuscrits éthiopiens de la collection Griaule* ; le R. P. Dubois, *Ethnographie des Bétsiléo* (Madagascar) ; Kurt Sachs, *Les instruments de musique de Madagascar*.

Germany. It is not yet known who will be the teachers

appointed to the Anthropology Department of the University of Vienna in place of Fathers W. Schmidt, P. W. Koppers, and P. Schebesta. Professor Muhlmann has moved from Hamburg to the University of Berlin Important contributions will be found in the 1938 issue of the *Zeitschrift fur Ethnologie*, the *Archiv fur Anthropologie*, the *Zeitschrift fur Volkskunde*, and the *Zeitschrift fur Rassenkunde*. Many of the articles contain valuable theoretical re-interpretations of field-work data, a type of work too often neglected in English-speaking countries. A review by W Knickeberg of the *Lehrbuch der Völkerkunde* (ed. K. Th. Preuss) appeared in vol. 69 of the *Z. fur Ethnologie* (1938, pp. 464–6), in which the reviewer points out that the textbook contains articles by a " non-Aryan " writer and that it amounts to a tribute to " an ethnological school . . . of which the Führer (B Malinowski) is a pronounced opponent of the National Socialistic Germany of to-day " (p. 466). The *Lehrbuch* has been withdrawn from circulation and a new edition is soon to appear

Among the publications of the official *Institut zum Studium der Judenfrage*, the monograph on " Die Juden in Deutschland " presents in an " objective " manner the " dangers " of Jewish influence on German culture. The series of articles by W. Milke in Schmoller's Jahrbuch on the various modern theories of anthropology is of outstanding importance.

An event of outstanding importance is the publication of W. E. Mühlmann's *Methodik der Völkerkunde* (1938). This author has previously contributed towards the establishing of a scientific approach to general ethnology. In his book, *Rassen und Völkerkunde*, Dr. Mühlmann discussed the inter-relationship of methods and points of view as between cultural and physical, especially biological, anthropology. His introductory essay in K. Th. Preuss's *Lehrbuch* is again an attempt to reformulate the methods and scope of the science of Man. The new book is a comprehensive survey of method and theory carried out from the functional point of view, but with many new and vital additions. It represents a decisive step forward in the development of cultural anthropology in continuation of the earlier work of Thurnwald and Shirokogorov.

Great Britain. At a summer school for colonial administration at Oxford in July, Lord Lugard gave an opening address and a number of anthropologists discussed problems of culture change, administrative methods, and problems of land tenure, labour, and customary law.

At Cambridge a new post was established, to which Dr. J. Trevor was appointed. Dr. L. Mair is engaged in field work in pure and applied anthropology in Uganda under the auspices of the International Institute of African Languages and Culture. The Royal Anthropological Institute has established a special committee on applied anthropology, which has been analysing problems of native welfare in the colonies. A deputation organized by this committee saw the Secretary for the Dominions (Mr. Malcolm MacDonald), and discussed the problem of consulting native opinion concerning the transfer of Protectorates from Great Britain to the Union of South Africa.

Among the recent books we may mention: *African Dilemma*, by F. Melland and T. Cullen Young (1937); *A Handbook of Tswana Law and Custom*, by I. Schapera (1938); both bearing on practical aspects of anthropology. The volume on the *Religion and Social Organization in Central Polynesia* (1937) (R. W. Williamson and R. Piddington), is a survey of the religious systems of that region with valuable theoretical analyses. The English translation of G. v der Leeuw's important book, *Religion in Essence and Manifestation*, and the appearance in English of G. Landtman's *Origins of Human Inequality*, both published in 1938, have to be noted.

The current issue of the *Journal* of the R.A.I contains the Presidential Address by H. J. Braunholtz on problems connected with museum technique; an article by O. F. Raum on " Some Aspects of Indigenous Education among the Chagga ", a theoretical analysis of original observations; and a memoir by H. I. Hogbin on " Social Reaction to Crime ", in which the problem of a unified reaction of collective consciousness to criminal action is debated on the basis of the writer's own field work.

India. The department of the University of Lucknow, where Dr. D. N Madjumdar is teaching, has planned out a scheme of research in the United Provinces from the linguistic and ethnographic point of view, with due attention given to problems of culture change. Dr. Madjumdar's book, *A Tribe in Transition*, contains an account of original field work on the culture of the Hos of Chota Nagpur. In Calcutta, Dr. K. P. Chattopadhyay is organizing a five-year plan of ethnographical studies on the Santals. The sociological work at the University of Bombay, under the leadership of Dr. G. S. Ghurye, is also concerned with research in cultural anthropology, mostly in regard to the Northern tribes and castes Dr. Chandra Roy, editor of the journal *Man in India*, well known for his studies on the Oraons, has recently published with his son Mr. R C. Roy a volume on *The Kharias* (1937). Field work in social anthropology with special attention to problems of psychology and psychoanalysis has been undertaken by Prince Peter of Greece in the Himalayan Region (1937–38).

Netherlands. The annual conference of Ethnologists in the Netherlands and the meetings of the section for Ethnology of the Flemish scientific congress in Belgium had been in the last few years co-operative. The subjects discussed referred more specifically to studies in Indonesia and Africa.

Of recent books we may mention the five volumes by Dr. Alb. C. Kruyt entitled *De West-Toradja's op Midden Celebes*, published by the Royal Academy of Sciences (Amsterdam) in 1938. An interesting article in the journal *Mensch en Maatschappij* is " Ethnology as a Cultural Science ", by G. W. Locher, in which the contemporary schools and tendencies of anthropology are analysed.

Scandinavia. In the Scandinavian countries anthropological work is partly concentrated on the studies of Arctic cultures, partly on folklore, but also on exotic ethnography. Dr. K. Birkett-Smith continues his publications on the Eskimos, and he has reorganized the Museum in Copenhagen, which was inspected by a large number of visitors during the 1938 International Congress. A new important journal, *Folk-Liv*, was started in 1938 with Professor Sigurd Erixon as main editor. It is the official organ of the Association for European Ethnology and Folk-lore and of the Comité Exécutif de Folk-lore. In this journal the two sides, ethnology and folklore proper, will be conjointly treated, covering the whole of European peasant and popular cultures.

United States of America. The general trend in American anthropology is towards the expansion of interests beyond the American Indians. Thus American anthropology has moved westward largely through its outpost in Honolulu. The department of anthropology at the University of Hawaii and the anthropological section of the Bernice Pauahi Bishop Museum are engaged in extensive research in field work and theory. The studies are primarily concerned with

the ethnographic exploration of the Pacific regions, mainly those of Polynesian and Indonesian stock, while work in Australia, New Guinea, and Melanesia is largely directed from Sydney. Recently a term of field work was undertaken among the Tinguian and allied tribes of the Philippine Islands by Mr. Fred Eggan, of Chicago University, largely with a view to assessing cultural changes which had occurred since the visit of Dr. Fay-Cooper Cole some twenty years ago

American students have also recently done important field work in Africa Thus Professor M J Herskovits published in 1938 a two-volume work, *Dahomey: An Ancient West African Kingdom*, which will rank among the best monographs of African ethnography. In Australia, the work done by Professor Lloyd Warner, D S. Davidson, and L. Sharp has been an important contribution to the ethnography of that continent, as has been the work of M. Mead and Cora Du Bois in Melanesia and Indonesia.

Field work among the Indian tribes of Central and South America by American scholars has, in recent years, been carried out by Dr R H. Lowie in Brazil, J Henry in Gran Chaco, W. Z. Park in Northern Colombia, and by W. Lipkind and B. Quain in Brazil In Mexico and Latin Central America, the pioneering field work of Dr Robert Redfield has been followed by the research of R Linton (of California), Dr. Ruth Bunzel, A. Villa, A. T. Hanson, S. Tax, and C. Wagley.

Another tendency of American anthropology is the widening of scope and methods. The historical method (culture areas, culture centres, the mapping of distributions, the computation of traits, and the reconstruction of sequences) is perhaps still dominant. At the same time, functionalism, the study of cultural patterns, the statistical approach, even a judicious revival of evolutionism, the psychological and psychoanalytical treatment of anthropological material—all these contribute towards the widening of the foundations and diversification of aims in the study of Man.

American archæologists are now engaged in defining past cultural levels as organic and functional units rather than in terms of one trait or even an agglomeration of traits. The technique of tree dating and the use of well-defined ethnographic data in prehistoric research are contributing towards a more exact chronology and fuller cultural analysis.

In linguistics a widening outlook which embraces phonology and semantics as well as methods of recording texts and interpreting them is being elaborated. The new philosophical school of semantics led by Count Korzybski was able to establish an Institute at Chicago to which G. Devereaux is attached for anthropological research. The study of primitive music has been strengthened in America by the appointment of Professor Kurt Sachs to a chair at the University of New York.

The *American Anthropologist* for 1938 contains articles by V. F. Ray and others on " Tribal Distributions in Eastern Oregon and Adjacent Regions ", in continuation of a previous article (1937) on " Great Basin Shoshoneans ", by W. Z. Park and others. These articles show another tendency of recent American work, the attempt to complete the scientific survey of certain lesser-known areas, the Great Basin, North-eastern Woodlands, and the Mackenzie River area.

Latin America. A good guide to the detailed study of anthropological events in the Latin Americas is provided by the *Handbook of Latin American Studies* (edited by L. Hanke). It was first published in 1936, and a third volume appeared in 1938. Besides annotated bibliographies, there are provided also general summaries of events, institutionalized work, and teaching. The summaries have been drafted in the previous volumes by A M Tozzer, J A Mason, R. Redfield, R Karsten, and W. Bennett The account by R Karsten, for instance, in the volume for 1937, supplemented by a note by W. Bennett, gives a good idea of what has been happening in South American ethnology for the past few decades. In the 1938 issue a general statement by A Métraux indicates such recent developments as the field work of C Nimuendajú in north-east Brazil, the work done by Dominican friars in Peru, and the publications of the Institute of Tucuman and those sponsored by J Imbelloni in Buenos Aires. According to A. Métraux, South American anthropologists are not sufficiently aware yet of the need of organizing and carrying out field work, which is largely done by foreign students, to mention only R. Karsten, A. Métraux, M. Gusinde, and R. H. Lowie. The second instalment of M. Gusinde's *Ethnography of the Firelanders* was published in 1937 and deals with the culture of the Yamana. (B. MA.)

ANTIGUA: *see* LEEWARD ISLANDS

ANTI-SEMITISM in 1938 was again centred in Germany. The annexation of Austria with her 200,000 Jews (not counting those of partly Jewish origin) gave a new impulse to the anti-Jewish drive of the Nazi regime. In Austria, a few days after the occupation by German troops, drastic measures were adopted against the Jews. Thousands were arrested, among them the communal leaders and some prominent men like the world-famous ear specialist, Professor Neumann (who was soon released again), and Baron Rothschild (who is still in prison). In the streets of Vienna Jews were rounded up to scrub the pavements and wash motor-cars. Jewish businesses were occupied and Nazi commissaries installed. In many cases the Jewish owners were compelled to sell out at prices fixed by the Nazi Party. From some of the provinces, particularly in Burgenland, the majority of the Jewish inhabitants were forcibly expelled, and in some cases put across the border during the night without passports. A few weeks after the occupation, all the racial laws of Germany came into force in Austria, thus depriving thousands of Jews of their livelihood. The anti-Semitic drive in Austria brought renewed vigour to anti-Semitism in Germany. After some anti-Jewish riots in Berlin and other towns, new laws were issued compelling all Jews possessing more than 5,000 marks (roughly £400) to register all their property with the government, and making it compulsory for all Jewish shopkeepers to mark their shops conspicuously with their names in white letters. Soon afterwards Jews were expelled from certain important branches of trade. They were not allowed to continue as estate agents, commercial travellers, and agents, etc. By Sept. 30, all Jewish doctors, including ex-servicemen, were forbidden to continue to practise. By Nov. 30, the same ban was extended to all Jewish lawyers, again including ex-servicemen.

At the end of October many thousands of Jews of Polish nationality living in Germany were expelled at a few hours' notice and transported to the frontier. Only very few were admitted into Poland, the rest being either taken back to Germany or compelled to stay in no-man's-land. Their sufferings drove a Polish-Jewish youth in Paris, named Grynszpan, to desperation. On Nov. 7 he murdered Ernst vom Rath, Third Secretary of the German Embassy in Paris. This crime was followed by organized pogroms throughout Germany, which started in all towns at two o'clock in the morning. Most of the synagogues were burnt down, all Jewish shops were destroyed, and some looted. Many

thousands of Jewish men were sent to concentration camps. A new law was issued following the pogroms, which barred all Jews from retail trade, imposed a collective fine of 1,000,000,000 marks (roughly £83,000,000) on the Jewish community in Germany, and compelled the owners of the destroyed shops to restore them at their own expense, the insurance money going to the government The fine amounts, according to government estimates, to one-fifth of the total Jewish property in Germany, and according to neutral estimates, to about one-half. The pogroms led to strong reactions in public opinion, particularly in Great Britain and the United States, and to a kind of diplomatic break between Germany and the United States.

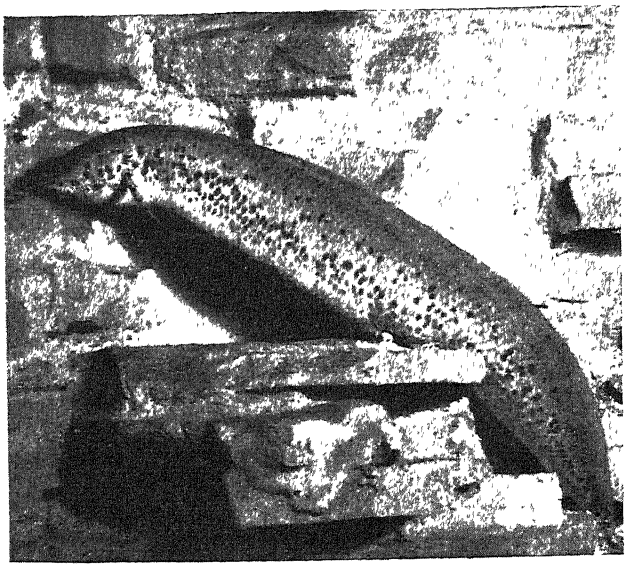
In Rumania, the anti-Semitic Goga-Cuza government was deposed by the King in February, and gave place to a more moderate government which, although it did not revoke the anti-Semitic laws, watered them down in practice.

In Poland, no striking new developments took place, except a law prohibiting ritual slaughter, and another law enabling the government to revoke the Polish citizenship of people who had not lived in Poland for a considerable time, There were frequent anti-Jewish riots, particularly in the universities, and a general anti-Semitic trend in policy.

In Hungary a law was passed in May introducing a *numerus clausus* for Jews in many walks of life, including business life. On the other hand, the government suppressed violent anti-Semitic outbreaks, the radical anti-Semitic party of Major Szalasi was dissolved and its leader sent to prison.

In Italy, which had not known any anti-Semitism for a long time, the fascist government suddenly turned anti-Semitic in July. All Jews who had settled in Italy after 1919 were ordered to leave by March, 1939, with a very few exceptions. All Jews were barred from schools and universities, whether as students or teachers. All Jews, with the exception of those who had some special distinction such as volunteers in any of the Italian wars, or early members of the Fascist Party, were expelled from the Fascist Party and were forbidden to own more than a limited quantity of land, factories, or to hold leading business positions. Marriages between Jews and Gentiles were prohibited. The Italian anti-Jewish legislation is based on the racial, not the religious principle, although racial inquiry goes back only to parents, and not to the grandparents as in Germany. (L. G. M.)

AQUARIUMS. In Great Britain the aquarium of the Zoological Society of London received a present of African lung-fish from Captain C. R. S. Pitman, Game Warden of Uganda. The lung-fish has its swim-bladder converted into an air-breathing organ, and spends months encased in mud with a narrow breathing tube connected with the air. It was in this condition that they travelled. The Duke of Bedford presented a collection of large golden trout bred on his Tavistock estate. The New York Aquarium sent a shark-sucker, which attaches itself to a shark and feeds on the food dropped by it. Mr. H. Vinall, of the Aquarium staff, went to the Red Sea to supervise the collection and transport of fishes. He brought back several new to the Aquarium, including the Eastern swallow-tail wrasse, angel fish, and boar fish. Poisonous fishes received included a sting-ray from Madeira and a lesser weever from Brighton. From Florida came a porcupine fish capable of inflating its body until it becomes spherical. A large octopus, 4 ft. in span, came from Madeira and also a crab which holds a sponge on its back as a screen from its enemies. From California came a



Fox Photos]

AFRICAN LUNGFISH, AT THE AQUARIUM OF THE LONDON ZOO

green moray or giant eel, 4½ ft. long. Amazon angel fish were successfully reared and Chinese Paradise fish were bred.

Brighton aquarium opened a new scenic section for crocodiles and alligators, and thirty additional tanks for tropical and exotic fish, and issued a new edition of the *Aquarium Guide*. New exhibits included angler fish, owl fish, and three baby penguins hatched in the aquarium. Chester and Maidstone Zoos both opened new tropical fish tanks.

At Colombo, Ceylon, 175,000 rupees were granted to meet the cost of the new aquarium, a necessary adjunct to a fisheries research station and hatchery. (V. R.)

In the United States the new aquarium, the Marine Studios, near St. Augustine, Florida, was formally opened on June 23. The extremely large size of the two aquariums comprising it make possible the display of marine animals of a size not ordinarily seen in captivity. On June 1 a municipal aquarium was opened to the public at Baltimore. Although one of the smaller aquariums of America, it displays both native and tropical species. There are in all 42 display aquariums. The Toledo Zoological Society of Toledo, Ohio, has nearly completed a pleasantly designed aquarium for fresh-water displays. There are 41 large tanks for running water and 25 small ones for standing water. New York City, Winter Park (Fla.), Santa Cruz, and San Diego (Calif.) are laying plans for new aquariums.

Other cities in various parts of the world with similar plans include Havana, Rotterdam, Montreal, Shanghai, and Tokyo.

AQUICULTURE: *see* BOTANY; HYDROPONICS.

ARABIA. Although it has been said of the Arabian Peninsula that its normal occupation is war, it has to be recorded that the year 1938 was one of unbroken peace. Everywhere life went on smoothly, and although the world situation preoccupied the minds of Arabian statesmen, and although the Palestine situation preoccupied the minds of nearly all Arabs, no untoward event occurred throughout the Peninsula.

Stable internal conditions are often reflected in the readiness of eminent men of State to travel abroad, and if this criterion be correct, it can be said of Saudi Arabia, the Yemen, and Oman that they presented reassuring signs.



Imperial Airways]
SHARJAH ON THE OMAN PENINSULA, REFUELLING STATION ON THE ENGLAND–INDIA–AUSTRALIA AIR ROUTE

For from Saudi Arabia, the Crown Prince, the Emir Sa'ud, eldest son of King Abdul Aziz, paid a visit of several weeks to Great Britain during the summer; the second son of the Imam of the Yemen, the Seif-ul Islam al Husseini, was abroad in Europe and Asia; and in the earlier half of the year the Sultan of Muscat and Oman himself paid a prolonged visit to Japan, the United States, and Great Britain.

A notable tribute to the security prevailing in Saudi Arabia and to the esteem in which Ibn Sa'ud is held was provided by the visit paid by the Earl of Athlone and the Princess Alice to that desert kingdom. In the spring of the year these two members of the British Royal Family journeyed from one end of the Arab kingdom to the other, from Red Sea to Persian Gulf, and expressed their open admiration of the regime which they witnessed.

The foreign affairs of the various States comprised in the Peninsula were conducted without a hitch. In January the text of the treaty which the Yemen had made the previous September with Italy was published, the chief provision being that Italo-Yemeni friendship, symbolized in the sending of arms from Rome, was to endure on the basis outlined in the treaty for 25 years; later in the year the outstanding differences between the Aden government and the Yemen were resolved, with the exception of that concerning the ancient site of Shabwa, which Aden claimed as part of the Hadhramaut, and therefore under British influence, while the Yemen claimed it as its own. However, there were good reasons at the end of the year for assuming that this difficulty would be amicably resolved.

The Anglo-Italian Agreement signed in April, and ratified in the following autumn, had direct reference to the Arabian Peninsula, the principal point in this regard being that both Italy and Great Britain pledged themselves to respect the integrity of Saudi Arabia and the Yemen.

On the economic side, the most considerable development concerned the discovery, in October, of petroleum in commercial quantities in Ibn Sa'ud's eastern province, the Hasa. There a concession is held by the Standard Oil Company of California, which has formed a subsidiary company for Saudi Arabia. Already this company has done well with the exploitation in the neighbouring island of Bahrein. No doubt now exists of the presence of large quantities of oil in eastern Arabia, and the exchequer of Ibn Saud will benefit to the extent of a royalty of four shillings per ton of petroleum exported. Elsewhere, whether in Kuwait or on the Red Sea side of Saudi Arabia, prospecting for oil continues, but so far the product has not been found in commercial quantities. In Oman the concession that has been granted to a subsidiary of the 'Iraq Petroleum Company has not yet been implemented, owing to uncertain conditions in the interior. (K. Wi.)

Area and Population:

Total Area (estimated) 1,000,000 sq miles
Total Population (estimated) (1937) 9,300,000

Territory	Area (Sq. M.)	Population	Capital
Saudi Arabia	800,000	4,500,000	Riyadh
Yemen	75,000	3,500,000	San'a
Oman and Muscat	80,000	500,000	Muscat
Kuwait	—	80,000	Kuwait
Trucial Sheikhs	6,000	80,000	—

Language. Arabic
Religion. Mohammedan
Rulers: Saudi Arabia, King Ibn Sa'ud; Yemen, Imam Yahya Muhammad Hamid ed Din; Oman and Muscat, Sultan Sayyid Said bin Taimur; Kuwait, Sheikh Ahmed Ibn Jabir al Subah.
Products. Dates, hides, sheep, camels, wool.
Overseas Trade, 1937:

Saudi Arabia and Yemen,	Imports from U.K.	£87,368
Saudi Arabia and Yemen,	Exports to U.K.	£56,077
Oman and Muscat, Trucial	Imports from U.K.	£38,307
Oman and Kuwait	Exports to U.K.	£13,208

Currency. The British gold £ is the basis.

ARABIC LITERATURE. Since 1920 the centre of modern Arabic literary activity has lain in Egypt. Only in poetry is the Egyptian predominance challenged to any extent in other Arabic-speaking countries, while the output of the formerly active Syro-American groups in the U.S.A. and Brazil has dwindled. The principal feature of modern Egyptian literature has been its experimentation with new literary techniques, especially in adapting the standard written language to modern subjects and style. The most suitable field for this purpose is found in the short story, which permits of a cautious infiltration of vernacular usage; the production of these has greatly increased in recent years, and has led to similar experiments in 'Iraq and elsewhere. Some more ambitious attempts at full-length novels have been made with varied success. The most remarkable is *Return of the Spirit*, by T. el-Hakim, which, like an earlier autobiographical work, *The Days*, by Taha Hussein, has been translated into more than one European language.

Since social and economic conditions, however, tend to force writers to rely for publication mainly on literary journals, the great bulk of the literary production takes the form of single or collected essays. This output of belles-lettres reflects the competing influences of mediæval Arabic literature and the modern European literatures, both French and English, and to a lesser extent Russian and German, resulting in a wide conflict of standards in style and language. It is noteworthy also that some women writers are numbered among the more prominent essayists.

In contemporary poetry the instability arising from the conflict between classical tradition and modern technique is still more marked. On the whole, the classical tendency predominates, although the subjects (and more rarely the form) may be ultra-modern, as, notably, in the work of the 'Iraqi poet ez-Zahawi and some of the more recent lyric poets. The vernaculars are extensively used in popular poetry and songs, but have gained no recognition as yet in literary circles, even while the popular productions are appreciated in themselves. They have also entered into the attempts to create a native Arabic theatre, but the efforts made in this direction, never very strong, have latterly suffered a check. On the other hand, one of the

most promising recent developments is the rise of a literary drama, both poetic and prose, the latter influenced to some extent by French symbolism.

See: "Modern Arabic Literature", article and bibliography by I. Kratchkovsky in *Encyclopædia of Islam, Supplement No. 1* (1934) (H. A. R. G.)

ARBITRATION, INDUSTRIAL. In Great Britain the accentuation of the recent trend of trade unionists' and employers' organizations towards negotiation and arbitration in place of strikes or lock-outs rendered 1938 industrially notable. Increased activity in industry and a decided rise in trade union membership, accompanied by a whole series of claims for improvement, found the machinery of arbitration and conciliation sufficiently elastic and well based to overcome most difficulties. In spite of this, the number of disputes rose from 808 in 1937 to 1,112, of which 457, in the mining industry, were of a purely local character. A series of disputes in engineering and shipbuilding (particularly aircraft and armament production) led to 220 stoppages; the great majority of them were unofficial, but some of them led to the extension of existing arbitration machinery.

During the year additional trade boards were set up, particularly in the baking trade; two new joint industrial councils were formed, and two constituted on a wider basis; the industrial court issued twenty awards and the Civil Service arbitration tribunal fifteen; single arbitrators and *ad hoc* boards dealt with six cases; and Ministry of Labour conciliation officers were concerned in the settlement of 66 disputes. Industrial arbitration and negotiating machinery dealt, not only with wage claims during the year, but with amenities like holidays with pay, and with the retoration of conditions prior to 1931, when drastic alterastions had been imposed on accepted conditions in many industries. Two noteworthy agreements were also reached. In the printing industry a reduction in normal working hours from 48 to 45 a week was provided for, and in flour milling an agreement concluded by the industry's joint industrial council gave a 42-hour week to shift workers and a 44-hour week to weekly-wage operatives, while the payment of sums to secure the full weekly wages of employees working short time in certain circumstances was also agreed upon. An important principle was contained in the award of increased rates to 150,000 postal workers at the end of the year by the Civil Service Arbitration Tribunal, which usurped the prerogative of the Treasury and dealt with promotion.

Considerable progress was made in preparation for the establishment of new machinery for the retail distributing trade, and under the auspices of the Ministry of Labour committees representing all sections of the industry have been working out a plan for the establishment of regional trade boards. Many difficulties have been overcome; the original plan has been considerably amended, and an accepted plan will probably be submitted to the Ministry of Labour for formal ratification in the spring of 1939. In the meantime considerable progress was achieved by the Shop Assistants' Union in persuading local grocery chain stores to sign agreements accepting the union's minimum wage standards. Two of the greatest tests were placed on existing negotiating machinery during 1938, and at the end of the year, although no finality was reached, it seemed probable that the machinery would stand the strain. In the engineering industry claims put forward by the two important union groups for higher wages and improved conditions for more than 1,000,000 workers were rejected by the employees' organization as being inopportune because of the state of trade, and similar claims by the railway unions were rejected for similar reasons; in each case the union executives are to review the situation, with the possibility of renewing their claims early in 1939. (V. B.)

ARCHÆOLOGY. In the following article the eastern and western hemispheres are separately considered; and in the case of the eastern hemisphere, which is taken first, certain archæological periods are taken in chronological order.

Old Stone Age. *Extensions of Flake-cultures* in regions where no Lower or Middle Palæolithic remains had previously been defined, have been revealed by explorations conducted during 1938. Arabia, it had been expected, would prove to have been a province of the Hand-axe cycle in rainy (pluvial) periods corresponding to the European Ice Age and would serve as a link between the Chellean-Acheulian cultures of Africa and Palestine on the one hand and of India on the other. But in southern Arabia in gravels in the valley of the Wadi Amd, a tributary of the Wadi Hadhramaut, Miss G. Caton-Thompson and Dr. Gardiner have found only Levalloisean flake-tools. These are crude and little specialized in workmanship, and are found principally in the gravels of a terrace 10 m. above the present wadi bed which had been laid down in a period of increased rainfall, apparently the latest of several pluvials. No Upper Palæolithic remains were found, and a microlithic culture of mesolithic aspect seems, in fact, to belong to early historical times (*Nature*, July 23, 1938).

On the Turkish plateau flake industries were generally expected. Prof. Shevket Aziz Kansu has, in fact, now found such *in situ* in high gravels at Etiyokuşu, near Ankara. The tools are again produced by the Levalloisean technique, but some approximate in form to those of the European Mousterian culture.

In the Balkans the first traces of Middle Palæolithic men have been discovered by Dr. Dorothy Garrod in the cave of Batcho-Kiro, near Drenovo, Bulgaria. In the lowest layer of the cave good Mousterian implements were discovered. Three later occupations are characterized by Middle Aurignacian tools. These Upper Palæolithic remains help to link up the Aurignacian of Kurdistan, Palestine, and the Crimea with the "Middle Aurignacian" of Central and Western Europe.

Fossil Men. The first authentic skeletal remains of a maker of hand-axes and the oldest satisfactorily dated member of our species (*Homo sapiens*) seem to be represented by the fragments known as the Swanscombe skull. None of the authentic Lower and Middle Pleistocene fossil men, discovered before 1935, could confidently be attributed to the makers of Chellean or Acheulian hand-axes (once regarded as the type tools of Lower Palæolithic cultures) nor to direct ancestors of modern man. In 1935–36 Mr. A. T. Marston discovered two bones of a skull in the gravels of the 100-ft. terrace of the Thames, exposed in the Barnfield gravel-pit at Swanscombe, Kent. A committee of the Royal Anthropological Institute has now presented a report on Mr. Marston's discovery, which was discussed at the Cambridge Meeting of the British Association for the Advancement of Science. It appears that the middle gravels, from which the skull came, were deposited in an interglacial period, probably the "great interglacial" corresponding to Mindel-Riss in the Alps. The fauna from the skull horizon was essentially Middle Pleistocene. The tools consisted mainly of Middle Acheulian hand-axes and flakes, normally associated with such. Of the skull itself

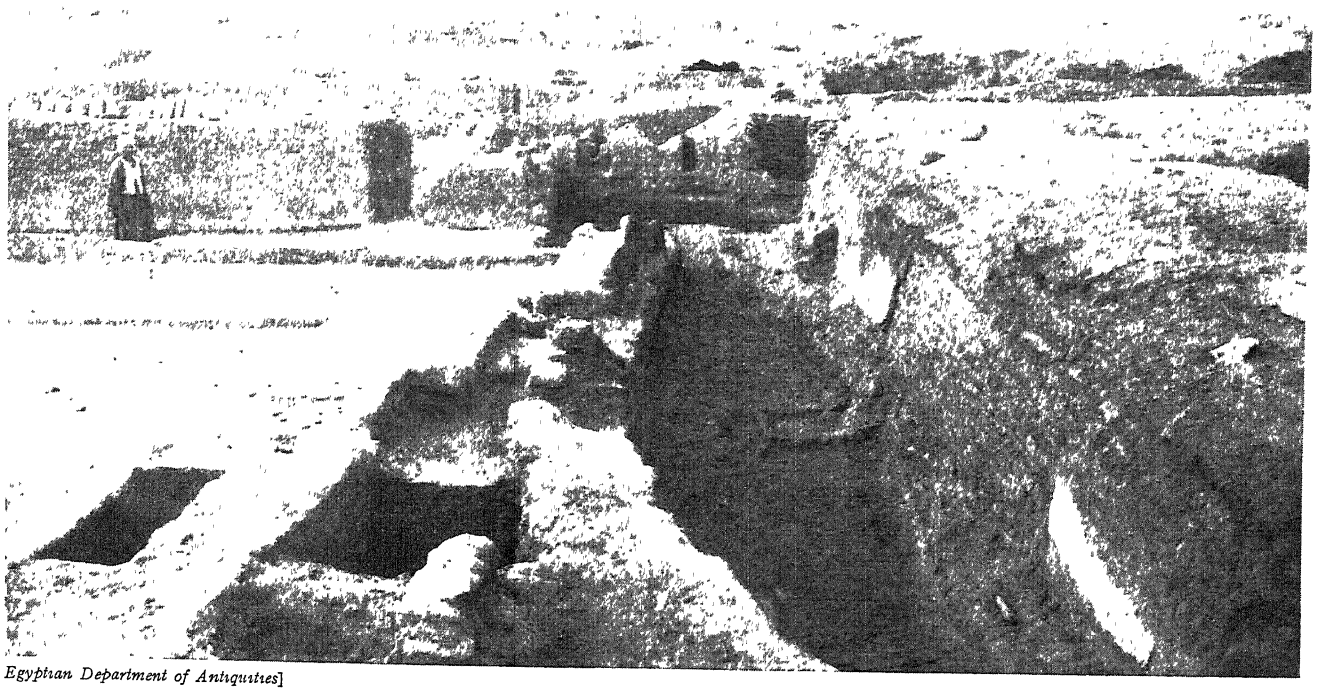
only the occipital and left parietal survive, but they fit together perfectly. In the view of Prof. le Gros Clark, Dr. Morant, and Sir Arthur Keith, the fragments would be more appropriate to a man (or to be exact a woman) of modern type (*Homo sapiens*) than to the ape-like varieties (*Sinanthropus, Pithecanthropus, Homo neandertalensis*), which British anthropologists regard as aberrant and extinct genera or species of the human family. None was explicitly associated with the manufacture of hand-axes Swanscombe thus supports the view that the hand-axe cultures were created by our direct evolutionary ancestors (*Journal of the Royal Anthropological Institute*, 1938; in the previous volume the discoverer presents an independent report on the find differing in some respects from the Committee's conclusions).

Mesolithic. The mesolithic period was created to fill the gap between the end of the Old Stone Age, coinciding with the close of the last Ice Age, and the belated establishment of a neolithic economy in north-western Europe. The cultures (Azilian, Tardenoisean, Maglemosean, etc) which occupy it are accordingly partly contemporary with neolithic and early metal age civilization in the Near East (*see* following paragraph). It has been assumed that their authors were degenerate and impoverished descendants of the reindeer-hunters, who in the favourable conditions of the latest glacial episode had created the brilliant Magdalenian culture of France. Whatever their origin, the extent of their degradation and impoverishment has been somewhat overestimated. Dr. Grahame Clark's excavations during 1937 and 1938 near Farnham, Surrey, have shown that some Tardenoisean hunters at least erected substantial huts wherein to shelter. The hut excavated in 1938 was an irregular oval in plan, measuring 27 ft. by 15 ft. Its floor had been excavated in the soil to a maximum depth of 3 ft. It is the fourth to be explored of a group of dwellings, located near a permanent spring. Similar dwellings have recently been discovered in France too at Piscop, Seine-et-Oise. Since 1918, Soviet archæologists have recognized even more substantial dwellings, excavated in the löss by mammoth-hunters who lived in the Ukraine during the Ice Age itself. The pit-dwelling is not therefore an innovation in mesolithic times, but a legacy from the Old Stone Age like the economy of the pit-dwellers. (To be published in *Proc. Prehistoric Society*, 1939; cf. *Antiquity*, xi (1937), 476.)

Neolithic. *Antiquity of the Neolithic Revolution in the Near East.* The revolution, which put man in control of his own food supply by cultivating plants and breeding animals and so made civilization possible, is generally supposed to have begun in the Near East; for only there were suitable plants and animals available. Its starting-point has not yet been defined. But its enormous antiquity in the Fertile Crescent (extending from Egypt across Palestine and Syria to the Persian Gulf) has been dramatically demonstrated by the completion, in the winter of 1937–38, of the culture-sequence at Tepe Gawra, near Mosul, in ancient Assyria. This truly "great mound", no less than 104 ft. in height, is composed entirely of the débris of buildings erected successively on the site. Twenty-six major occupational levels can be distinguished, chiefly by reconstructions of a group of shrines which occupied the centre of the settlement. The seven uppermost levels belong to the historical period and represent the fourteen centuries or so immediately after 3000 B.C. The remaining nineteen layers, in all 90 ft. thick, are earlier than 3000 B.C. and purely prehistoric. But layers VIII to XIV (counted from the top) run parallel to prehistoric cultures, familiar in Sumer (southern Mesopotamia), and there termed respectively Jemdet Nasr (latest), Uruk, and al'Ubaid (earliest) Below level XV at Gawra accurate parallels cannot be found in Sumer, a geologically recent delta that had only just become habitable in al'Ubaid times, but rather at Samarra farther north. Then levels XX to XXV represent the Halafian (Tel Halaf) culture already familiar from Dr. Mallowan's excavations at Arpachiya (also in Assyria) and at Chagar Bazar, farther west on the Khabur in Syria. The cobbled village streets of Arpachiya and its monumental circular buildings of mud brick, fine pottery superbly painted with polychrome patterns, seals and amulets carved in stone (one from Gawra adorned with a swastika) and instruments of imported obsidian reveal the high cultural level already attained. But even in the still earlier level, Gawra XXVI, pottery was already being painted in a style encountered also farther west at Judeideh in Syria.

The gigantic accumulation of débris gives a graphic indication of the time span involved, though it cannot accurately be evaluated in years. Simple villagers would hardly rebuild a temple more than once a century. Prof. Speiser's estimate of 4500 B.C. for Gawra XIX seems quite conservative. But whether the earliest settlement was founded nearer 5000 or 6000 B.C., it was still far in advance of the self-sufficing food-producing hamlets which represent the classical neolithic cultures in north-western Europe (Speiser, "Closing the Gap at Tepe Gawra", in *Asia*, xxxviii (Sept. 1938), 536–44).

Diffusion of Neolithic Economy. After the publication of W. A. Heurtley's *Prehistoric Macedonia* (Cambridge, 1938), the neolithic cultures of Europe can be seen as the last belated outliers in a continuous series of inter-related cultural groups extending from Hither Asia across the Turkish plateau and the Balkans and along the Danube thoroughfare with its extensions down the Vistula, Elbe, and Rhine to the Baltic and North Sea coasts. Heurtley's book does much to bridge the former Balkan gap. The "trade" maintaining contact between the several disparate groups in Central Europe has been elucidated by E. Buttler's study, published in *Marburger Studien*, 1938. *Spondylus* shells imported from the Mediterranean occur throughout the "Danube thoroughfare" and right down to the Lower Vistula and the Middle Rhine. Even pots, and presumably their contents, were transported over long distances—for instance, from the lower Main near Frankfurt to the environs of Cologne and from the region round Szeged in southern Hungary northward to Silesia and southward across the Danube to Vinča, near Belgrade. And to the last-named village were brought fayence beads from the Near East. None of the imports can be used to date the neolithic villages in which they are found. A maximum date towards 5000 B.C. would not affect their position in the cultural and chronological scales as inferior to contemporary Oriental settlements and later than say Gawra XXVI. But a short chronology putting the arrival of neolithic peasants in southern Germany rather after 3000 B.C. receives support from newly recognized Egyptian imports buried in graves of the succeeding Early Bronze Age. In graves of that phase round Szeged and in Moravia the dead were wearing segmented fayence beads of a type current in Egypt about 1400 B.C. But the Early Bronze Age on the Danube is admittedly contemporary with the late neolithic of Denmark and North Britain. Accordingly, about 1500 B.C. the archæologist can survey a continuous hierarchy of cultures descending from the metropolitan



Egyptian Department of Antiquities]

THE 'BOAT GRAVE', AT SAQQARA, PARTLY BURIED BENEATH THE FOUNDATIONS OF THE MASTABA ON THE LEFT

cities of Mesopotamia through literate but provincial cities in Syria, Anatolia, and peninsular Greece, illiterate but bronze-using townships in the Balkans, and rustic Bronze Age villages in Czechoslovakia and south Germany to self-sufficing hamlets in the north, where metal was still normally unobtainable. A thousand years earlier on the short chronology a similar picture would hold good, but with a gathering economy in place of food-production in the north, no bronze north of the Balkans and literacy confined to Mesopotamia, Syria, and Egypt. This zoning is precisely what should be expected on the diffusionist hypothesis.

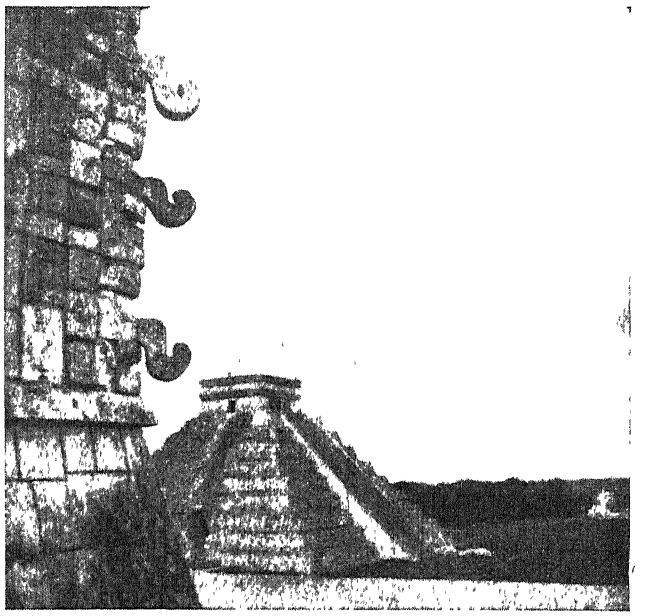
Neolithic Habitations. The neolithic cultures of north-western Europe (like that of the Maori in the nineteenth century A.D.) are belated survivals of a simple food-producing economy that had originated long before in Western Asia. Being known chiefly from graves and the foundations of perishable huts, the standard of life prevailing in neolithic societies was liable to be under-estimated. A more accurate appreciation of the amenities of neolithic life, even in such a peripheral region as Orkney, has been made possible by a discovery during 1938 at Rinyo in Rousay. A beaker (a type of vase distinctive of the very beginning of the Bronze Age in Britain) was there found among the latest relics in a hamlet in every other respect parallel to the famous "village" at Skara Brae on Orkney Mainland. The latter, too, must therefore have been occupied somewhere between 2000 and 1500 B.C., though its architecture seemed so advanced that dates as late as A.D. 400 had previously been suggested. Both hamlets consisted of roomy stone huts some 15 ft. square. Each hut was equipped with a kerbed central hearth on which peat was burned. On either side of the hearth were enclosures framed with slabs on edge, but otherwise identical with the plank-framed enclosures that served as bed in Norwegian peasant cottages in Setesdal; presumably they served the same purpose. In the wall above each bed were recesses to serve as keeping-places for personal possessions, as in Highland shielings, and against the rear wall stood a dresser formed of two tiers of stone shelves. Small cells in the thickness of the wall were attached to each hut. Stone lintelled drains under the hut-floors carried off moisture to a central conduit draining the whole settlement. In the wind-swept Orkneys absence of trees compelled the villagers to build their huts and make their furniture of imperishable stone, and at Skara Brae a sand-dune has preserved the house walls to a height of 8 ft. Elsewhere in Britain kindred communities must have occupied no less commodious and comfortably furnished premises constructed of perishable wood. Pottery like that from Rinyo and Skara Brae has, in fact, been found at several sites in eastern Britain, notably on an old land-surface on the Essex coast that was submerged about the beginning of the Bronze Age some 3,500 years ago (Childe, *Skara Brae*, 1931).

Bronze Age. More certainly than stock-breeding and agriculture did the use of metal tools originate in the Ancient East. The demand for metal in Egypt and Mesopotamia, when an economy based on trade and industry had created there populous cities, was a main cause of the diffusion of metallurgical knowledge even in Europe. In Egypt, the second revolution which transformed some villages into cities is associated with the rise of the Dynasties, with the first Pharaoh who united in a single kingdom the Nile valley up to the First Cataract. The tomb, probably constructed for the first Pharaoh, Aha, was discovered in the winter of 1937–38 at Saqqara, south of Cairo, near the city of Memphis he founded. Aha was previously thought to have been buried in a much smaller subterranean chamber near Abydos, in Upper Egypt, explored last century by Petrie, but his name alone recurs repeatedly on objects recovered from the new tomb. The superstructure was an immense brickwork rectangle (*mastaba*) 42 m. (46 yds.) long by 15·5 m. (17 yds.) wide. The walls,

still standing, 5½ ft. high, are relieved by alternating buttresses and recesses, imitating the matting and timber façade of the king's palace, and faced with white stucco They enclose 27 magazines which cover five subterranean chambers once roofed with wood. These, the actual burial chambers, had been plundered long ago, and only the scattered bones of two adults, smashed stone vases, and fragments of wooden furniture survived.

The westward extension of Mesopotamian civilization to which European metallurgy is more explicitly indebted is illustrated by Dr. Mallowan's excavations in Syria. Tel Brak, south of Nisibin, lies on the great natural route westward from Assyria between the Turkish mountains on the north and the Jebel Sinjur and desert to the south. Here Mallowan uncovered the ruins of a great palace, founded by Naram-Sin, fourth king of the Dynasty of Agade (Akkad) about 2500 B.C. It is dated by bricks, stamped with the king's name, and covered an area of 90 m. by 90 m. (nearly 100 sq. yds.); the apartments were grouped about a central court 40 m. (45 yds) square. A contemporary private house was furnished with a cemented bath. Under Naram-Sin's palace was the stump of an earlier temple-tower or ziggurat, measuring 60 m. (65 yds.) square at its base and still standing to a height of 10 m. or nearly 33 ft. This monumental structure seems to have been built rather before 3000 B.C. in the Jemdet Nasr period. For from its foundations the excavator recovered stone and fayence amulets in the form of animals realistically carved in the style current at Ur and Erech in Sumer (Lower Mesopotamia) in Jemdet Nasr times. So even before 3000 B C. genuine cities supported by specialized industries and kept in touch with Mesopotamia by regular trade and in which accumulated wealth was expended on the erection of monumental temples had extended as far west as the Khabur region. (For new discoveries bearing on the chronology of the European Bronze Age and its connexions with the Orient, *see above*, § *Diffusion of Neolithic Economy*.)

Iron Age. Much fresh light on the economy and sociology of the pre-Roman Britons has been obtained through the minute examination of a small settlement at Odstock, near Salisbury, by the Prehistoric Society under the direction of Dr. G. Bersu, the famous German excavator. The site, occupied round about 200 B.C., covers some six acres, and was at one time surrounded by a bank and ditch which cannot, however, rank as defensive works. Within the enclosure stood several circular huts, the largest 45 ft. in diameter. Their walls, presumably of wattle-and-daub, and thatched roofs were supported by posts, the sockets of which alone remain to reveal the plans of the houses. The numerous pits within the area cannot have been dwellings, as has often been supposed, but served as storage silos, working-places, and rubbish-pits. From the dimensions of the silos it can be inferred that as much as fifty tons of grain were stored in a single season. The excavators believe that before storage this grain must have been dried in ovens, and remains of suitable kilns have actually been found. The practice of kiln-drying of grain still survives in the Hebrides, but had been thought hitherto to begin with the Roman occupation. In point of fact, the rural economy of the Celts in Britain has been unduly disparaged. The Iron Age Britons are vindicated from the charge of living habitually in incommodious and unhealthy pit-dwellings by the Odstock excavations as are their neolithic forerunners by the new dating of Skara Brae (*see above*, § *Neolithic Habitations*). (V. G. C.)



A. Costa]

MAYA PYRAMID AT CHICHEN ITZA, YUCATAN, UNCOVERED BY PROF. MORLEY OF PHILADELPHIA INSTITUTE

Western Hemisphere. During 1938 progress was made in the reconstruction of the development of the many native cultures of the New World by continued field investigations, laboratory studies, and publication of results.

The problem of the antiquity of man in the New World continued to occupy the interest of American archæologists and has made considerable progress. The work being done by the Bureau of American Ethnology at the Lindenmeier site in northern Colorado was continued, and resulted in additional information concerning the activities of the individuals who once occupied this Folsom village site. The recorded distribution of materials of the Folsom stone complex was extended as the result of reconnaissance work in the Canadian area of Saskatchewan, where materials belonging to this category were discovered on the high plains east of the mountain region. Stimulated by the apparently successful geological analysis of the deposits associated with sites in which Folsom materials have been found, students of the subject working in the central Plains continued to study intensively the conditions surrounding certain of the deeply buried sites of that area.

Investigations on this problem were also carried forward in the Pacific Coast area as a result of the discoveries made in recent years along the beach levels of what are now extinct lakes in southern California. The most interesting of the finds were those made as a result of reconnaissance work sponsored by the South-west Museum and the Carnegie Institution of Washington in Clear Lake Park, northern California. A site was discovered on a fossil alluvial fan laid down during the pluvial period following the glacial retreat, on the surface of which Folsom points were found in association with certain California-type early implements. Although the Folsom points did not extend much below the surface, other articles related to the California complexes occurred at a considerable depth. Definitive conclusions cannot yet be drawn, but this site may in time yield a relative chronology of the older stone implement complexes of the region. Farther to the north, in eastern Oregon, field work in several caves revealed a confusing archæological picture which may furnish additional evidence on early man in America.

The field studies of the archæological remains of the

several areas of North America were continued during 1938, frequently with the assistance of the Works Progress Administration This was particularly true of the South-west, the Great Plains area, and the eastern United States Valuable contributions were made by the Field Museum of Natural History expedition to south-western Colorado The Museum of Northern Arizona made a special study of what may prove to be a new archæological complex in north central Arizona One of the largest and most significant field operations in the South-west was that of the Peabody Museum at Harvard, which has been studying the ruins of the old Hopi village of Awatovi for several years.

During the summer, field work was carried on in most of the Great Plains States lying between the Mississippi river and the mountains, especially in the northern section. The increasing field activities in the south-eastern United States, assisted by the Works Progress Administration, were continued. The investigations under the auspices of the Tennessee Valley Authority yielded good results, as did also expeditions sponsored by a number of local organizations Archæological sites in the middle Atlantic coast region and the north central States received their share of attention from field workers, who were, in most cases, carrying out field programmes of several years' standing.

As the archæological problems and materials relating to the better-known areas are becoming more clearly understood, more field investigations have been undertaken in those areas which until recent years received relatively scant archæological attention Field parties worked in the New England area On the west coast the University of California supported a third season's work in archæological sites near Sacramento and Stockton, and sponsored a reconnaissance of archæological records in British Columbia. In eastern Oregon representatives of the Oregon State museum investigated a number of caves, and in Montana archæological field work was carried on under the auspices of the Works Progress Administration. In the Alaskan area further field studies were undertaken by Dr. Hrdlicka, of the U.S National museum, in the Aleutian island chain.

A significant trend during 1938 was the growing interest in the historically documented sites occupied by Indians subsequent to their first contact with Europeans. This interest, which probably had its beginning in the south-eastern area, was reflected in the field work carried out in Pennsylvania and Michigan, as well as in some of the work in the Southern States. A field party from Columbia University working in co-operation with the State Historical Society of North Dakota, studied historic sites in that State. In the South-west, the important excavations carried on at Awatovi gave special attention to the periods of occupation which were subsequent to the coming of the Spaniards to the Hopi country. No genèral conclusions can yet be drawn from these recent and isolated results, but probably continued studies in historically documented sites may ultimately lead to a definite correlation of the prehistoric records with those furnished by early European travellers.

Further attention was given to archæological problems in the northern Mexican area and, as in the past, the Mexican government took an active interest in the study of a number of different archæological sites in that country. In 1938 the Piedras Negras expedition from the University of Pennsylvania did not, however, take the field.

During 1938 field investigations were exceedingly active in South America, particularly in the Andean region. In addition to the studies carried forward by several museums of the area, representatives from the Munich museum and the Stockholm museum worked in Peru and Bolivia. The American Museum of Natural History sent an expedition to the northern islands of Peru and the Peabody museum of Harvard had a party working in the southern highlands of Peru

These brief statements do not represent all the archæological studies which were undertaken during 1938. In a great number of laboratories, in universities, and museums, detailed investigations were made upon the results of the field work done in previous years. The interpretation and correlation of the field data which result from such laboratory activities enable archæologists to understand more clearly the inter-relationships of the several archæological cultures and to establish a clearer picture of New World pre-history.

As in the past, conferences and scientific meetings served to stimulate archæological research. In August a section of the International Congress of Anthropological and Ethnological Sciences, held in Copenhagen, Denmark, was devoted to New World problems. In the south-west, in August, a conference on the archæological problems of the area was again held in the Chaco cañon in western New Mexico under the auspices of the University of New Mexico. A similar conference, sponsored by the University of Chicago, took place in July at the Kincaid site in southern Illinois. In the eastern United States a number of informal group meetings were held, in which problems relating largely to pottery studies were discussed. There were also annual meetings of the Society for American Archæology, and of the Eastern States Archæological Federation, and joint meetings of several similar organizations.

(C. E. Gu.)

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ARCHBISHOPS' COMMISSION (DOCTRINAL REPORT). The Report of the Archbishops' Commission on Christian Doctrine was published in Jan. 1938, under the title of *Doctrine in the Church of England.* The committee was appointed at the end of the year 1922 with the following reference:

"To consider the nature and grounds of Christian Doctrine, with a view to demonstrating the extent of existing agreement within the Church of England and with a view to investigating how far it is possible to remove or diminish existing differences."

And to these terms (which were addressed to Dr. Burge, then bishop of Oxford, the first chairman of the commission) Archbishop Davidson added that the commission's report "should not be an authoritative statement", but should "be laid before the bishops for them to consider what further action (if any) should be taken."

Dr. Burge died in 1925, and his place as chairman was taken by Dr. Temple, then bishop of Manchester. The members of the commission, who numbered about twenty, were representative of many different departments of theological study and also of the various schools of thought in the Church of England.

In character, the Report is not an authoritative statement of Anglican doctrine, but a commentary or survey: a commentary on the existing documents and formularies which the Church of England accepts as authoritative, and a survey of current doctrinal tendencies in the Church to-day. These two elements are closely intertwined in the Report,

with the balance, if anything, on the side of the second; for it was the different tendencies of teaching in the Church at the close of the War, and the serious controversies which these aroused or threatened, that led to the commission being appointed. In form, the Report comprises a series of sections dealing with different aspects of Christian doctrine, together with a number of appended notes and memoranda; and it is unanimous in the sense that it bears the signatures of all the surviving members of the commission. On the other hand, differences of opinion on a number of points are frankly stated within the body of the Report itself, sometimes with indications as to which view has the support of the majority. In some cases the appended memoranda are stated to be the work of individual members of the commission, whose names, however, are not mentioned.

The principal subject of controversy at the time the commission was appointed concerned the sacraments; and this fact accounts for the large proportion of the Report—namely, one-third of the whole—which is devoted to the discussion of sacramental doctrine. The most striking features of this section are the way in which the sacraments are linked up with the whole idea of Christianity as the gospel of redemption; the discussion of the sense in which the Eucharist should be regarded as a sacrifice, and the affirmation of its Godward aspect; and the careful exposition of the various doctrines which have been held as to the presence of Christ in the Eucharist. This is followed by a note on "Reservation and Devotions", in which the commission, whilst declining to express any opinion as to the desirability of these practices, relates them to the various Eucharistic doctrines which it has endeavoured to interpret.

In dealing with the doctrines of the Creed the commission speaks with impressive unanimity upon the truth of the Incarnation, namely, the doctrine which asserts that Christ is both God and Man, and that "the God of Redemption is not other than the God of Creation." The Incarnation is thus set forth as the sheet-anchor of the Christian faith and the starting-point of Christian life and theology. The Report speaks with equal unanimity on the fact of Christ's resurrection. But on the manner in which both these cosmic historical events occurred the Report gives expression to different views held on the subjects, both in the commission itself and in the Church as a whole. Thus in regard to the Resurrection, while the majority affirm the traditional view that "the tomb was empty because the Lord had risen", another view is also stated which is more agnostic in regard to the historical details of the event. In regard to the Incarnation, the two views as to the historicity of the Virgin Birth are stated, but without any indication as to which view should be preferred. The reason for this is implied in the statement (made in the section on the Resurrection) that "The commission does not regard the analysis and detailed evaluation of this evidence, which has been fully studied in recent times, as a task which it is called upon to undertake." The historical questions, that is to say, involved in the doctrine of Christ's birth of a virgin, and of the empty tomb, were regarded as belonging, for the commission's purposes, to the sphere of New Testament scholarship rather than of doctrine; and in regard to both, though in varying degrees, it was felt that the progress of New Testament studies did not yet justify a final verdict.

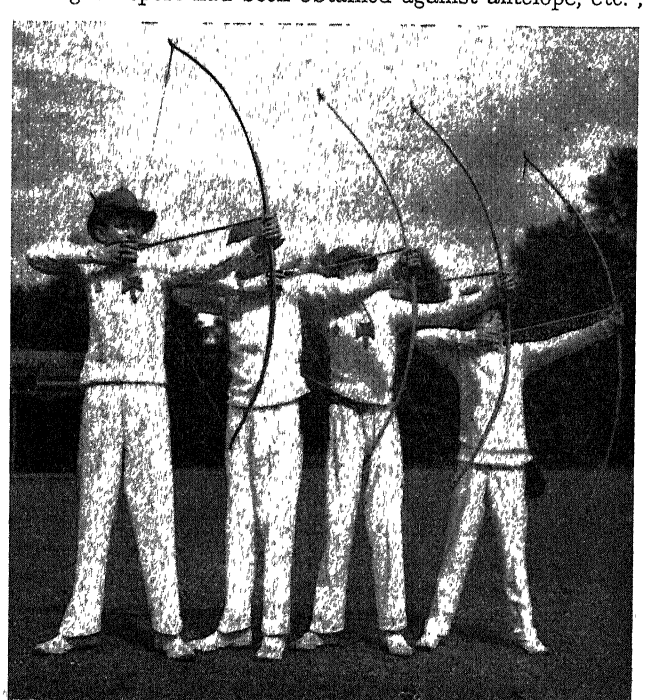
While the Report illustrates afresh the comprehensive character of the Church of England, the doctrinal factors which have often given rise to controversy are set in a new proportion, and new criteria are indicated for discrimination between truth and error, in whatever school of thought they may be found. The commission's attitude may be summed up as at once catholic and liberal—catholic in its acceptance of the Scriptures and Creeds as the starting-point of its inquiry and in its sympathetic attitude towards the religious experience of the Church throughout the ages; liberal in its candid recognition of the place of reason and criticism in theology, and in the implication that different degrees of authority attach to different statements, even within the Creeds themselves.

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ARCHERY. The eighth annual championship tournament of the International Archery Federation was held in August 1938 at the H.A.C. grounds, Finsbury, London, and attracted competitors from many countries, though the U.S.A. was not represented this year. M. F. Hadas became men's world champion with an aggregate of 2,305; and, for the first time, there was a tie in the ladies' championship, Mrs. Weston Martyr and Mrs. H. Nettleton (both of England) each returning the record aggregate of 1,973.

English archery has experienced a revival in recent years, and there are now over fifty clubs throughout the country. At the end of 1937 the Preparatory Schools' Archery Association was formed; it now has ten members, and it is likely that some of the public schools will take up the sport. Belmont School, Hassocks, won the first annual championship (1,351), Shortenhills, Chalfont (959), being second, and Felsted Junior (953), third.

During the year the Game Warden of Kenya reported that good sport had been obtained against antelope, etc.;



Associated Press]
BELMONT SCHOOL ARCHERY TEAM, WINNERS OF THE INTER-SCHOOL ARCHERY CHAMPIONSHIP

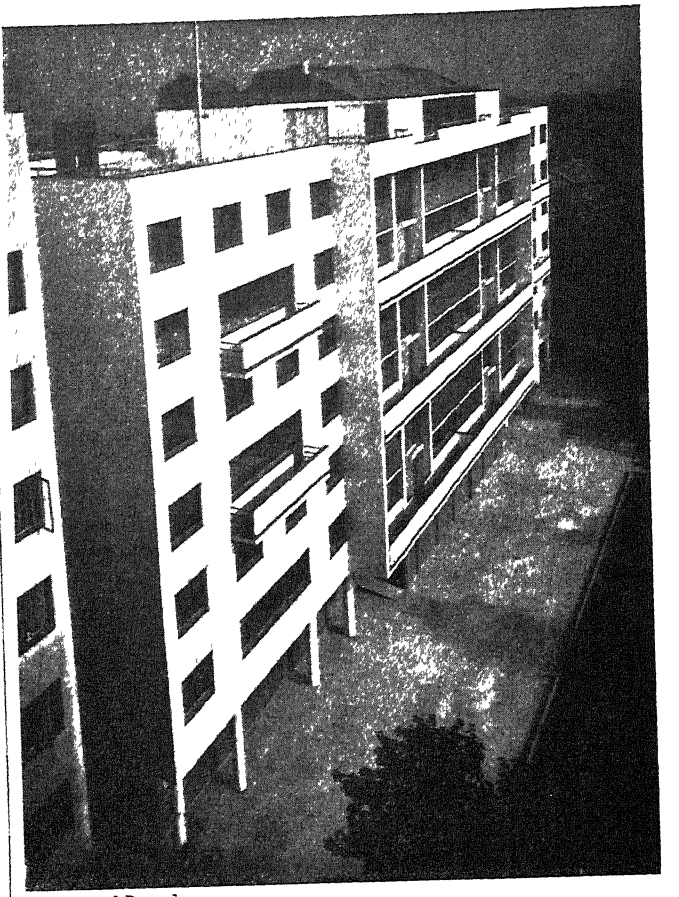
one archer remarked that " on soft-skinned animals the bow and arrow is if anything more effective than the rifle, because it kills instantaneously ".

United States. At the annual tournament of the National Archery Association, which was held in San Francisco, Aug. 8–12, 1938, Miss Jean A. Tenney, Clear Spring, Md., successfully defended her championship title. The men's championship title was won by Pat Chambers, Portland, Oregon

ARCHITECTURE. A review of the political and economic history will show that 1938 did not offer favourable conditions for a consistent development of architecture A contrast between opposed social philosophies caused a divergence in the direction of architectural progress. The spread of nationalism in Europe reflected itself in a further development of national styles. The emigration from Germany to England and the United States of the exponents of the modern movement increased the forces working towards international architecture in these countries. Governments exercised a greater influence either by direct style control or by the examples set in their own extensive building operations. A new military architecture produced ingeniously constructed defence lines, and theories on bombproofing for the towns and buildings of the future. An architecture of propaganda in Germany, Italy, and Russia provided forums for mass meetings; and striking architectural decorations for State visits were designed. Other important influences begun in previous years continued · exhibitions and fairs were held or underwent construction; the consideration of the physical and moral welfare of the population resulted in extensive building operations for housing, playgrounds, bathing resorts, recreational and youth centres.

Modern Architecture. Freedom in modern design is variously interpreted. One group, represented by the CIAM (Congrès Internationaux d'Architecture Moderne), makes a dogma of functional principles and arrives at an architecture expressive of this machine age and international in character. Individual architects, particularly Frank Lloyd Wright in the United States, show a greater leaning towards romanticism; their designs aim primarily at direct emotional appeal. In contrast to the first-mentioned group they are disinterested in scientific reasoning as justification for their art. The uncompromising utilitarian characteristics of the early post-war international style of architecture are undergoing modifications. At the beginning, efficiency, sunlight, and the rigid adherence to a structural system were of greater importance than the proportions and æsthetic organization of the elevations. It is now apparent that more attention is being paid to the sculptural massing of a building and the abstract composition of well-designed voids and solids of the elevations even at the expense of variations in construction. Sentiment for the past, preferences based on association and habits of thinking, have been the greatest obstacles to the broader acceptance of modernism.

Traditional Architecture. The national styles adopted by Germany and now considered in Italy for monumental architecture are traditional. Their forms are derived from historic examples. The more important buildings draw on the classic, if not directly for motives, at least for proportions, symmetry, and principles of design composition. In France, the United States, and England the influence of the academies, though receding, is still in evidence. The traditional domestic architecture of the northern countries is associated with sloping roofs and small isolated windows.



Architectural Review]
HIGHPOINT 2 FLATS AT HIGHGATE, LONDON, 1938, BY TECTON

Present designs vary only in details, the latter being influenced by current fashions or a vogue for a period of revival.

Materials and Methods of Construction. New materials are being developed: first, as cheaper substitutes for costlier natural materials; second, to bring a saving in labour costs; third, for new decorative and structural uses. The long-predicted boom in prefabrication shelters has not begun so far. Progress is now directed towards the prefabrication of standardized units of buildings like wall sections, kitchen units, and as before of complete doors and windows with frames and hardware.

In the United States the use of plywood carrying stresses in glued-up wall and floor sections has been successfully demonstrated by the United States Forest Products Laboratory. Heating specialities have been improved for greater precision in the automatic heating and air-conditioning systems. Panel heating, a system of warming floor and wall panels, is coming unto use. A fluorescent lamp producing better light distribution has been put on the American market.

Some Recent Architecture. In England, by and large, simplicity and quiet surfaces characterize most new buildings of this period. Looking at examples of the various building types, it can be seen that in a great number of recently completed flats the absence of superficial decoration is apparent, and that in an increasing number of cases windows are arranged in continuous horizontal bands instead of in the more traditional isolated vertical spots. The building of modern flats at Highgate (Highpoint No. 2) by Tecton, architects, exemplifies an interesting evolutionary step in the progress of modernism. A trend is here indicated, if an

isolated example can be used for this purpose, of modern functionalism showing a greater concern for decoration While the general flat character established in the first unit has been repeated with the same refinement in the handling of detail, the plan has reverted to the use of classical symmetry, and the overhanging marquees of the entrance are supported by Greek caryatids reminiscent of surrealist paintings.

A great number of unusually large medical institutions have come into existence. High buildings (as exemplified by the Birmingham Hospitals Centre) in contrast to isolated pavilions are now universal for large hospitals because of the opportunity for centralization of services and control and the rapidity of vertical circulation by means of elevators. For a free expression of architectural thought in a country where that is still permitted one must look to the exhibitions The British Empire Exhibition held at Glasgow followed the modern design trend, and in some buildings echoed the Paris Exhibition of 1937. A greater attempt was made, however, to break surfaces and spaces by some form of division to obtain decorative patterns. In another smaller way an interesting exhibition held in London by Mars (Modern Architectural Research Society) not only showed by means of an unusual display technique the vitality of a group of younger architects, but demonstrated their share in the advancement of modern architecture in England.

The new and imposing City Hall of Norwich with its neoclassic column treatment is, on the other hand, an example of architecture along traditional lines which is still finding a large appreciative public.

Not unlike England, France has recently completed medical institutions of a size exceeding the American prototypes. (The hospital Louis Pasteur at Colmar has 740 beds, the Beaujon at Clichy 1,100 beds, and the Cité Hospitalière at Lille 4,800 beds. Compare the Cornell Medical Centre in New York, with 1,000 beds.) Terraces often stepping back story after story to give a maximum of sunlight characterize the modern sanatoriums. (*E.g.* Sanatorium Héliothérapique at Vallauris) On the whole French work shows a native fondness for decoration, the use of forms and profiles which have ornamental value, and a general adherence to the principles for proportion and composition laid down by the École des Beaux Arts. The work and momentous writings of Le Corbusier and some other modernists show that there are a few architects living in Paris of a different mind who keep France in the international movement towards a modern architecture.

The decorations for the visit of the King and Queen demonstrate the gaiety and elaborate quality of French design as contrasted to the massive severity of decorations for which German propaganda has become known throughout the world.

Germany is in the process of building projects of a magnitude not seen for centuries on the Continent. They typify the unified and aggressive spirit of the totalitarian state in which organization in the extreme makes gigantic tasks possible. The State is responsible for most work, and even in minor architecture the individuality of the architect is barred from free expression by rigid style control. A national architecture is the result. Many examples of it will go down in history because of their size and solidity. The *Reichsparteitaggelände* of the National Socialist Party in Nuremberg consists of tribunes for reviews, assembly fields for troops and masses of people, avenues for processions, a congress hall for 40,000 spectators with a stage for 2,400 persons (the largest theatre in the United States, at Rockefeller Centre, has 6,500 seats), temporary housing for troops and organizations, a railroad station, and a systematic network of roads. The whole layout stretches over a territory seven kilometres long and three and five-tenths kilometres wide. The recreation buildings and grounds of the organization *Kraft durch Freude* on the island of Rügen (Clemens Klotz, architect) is another gigantically conceived scheme. It consists of vacation dwellings combined with vast squares for festivals, peristyled halls for assemblies, and huge swimming basins. The new airport building at the Tempelhof field in Berlin is another example of a large building, superb in system, orderly but dull in design.

Italy, not unlike Germany, uses architecture for the glorification of the State and the fascist ideal. The competition for the Casa Littoria, at the Foro Mussolini in Rome (by Del Debbio, Foschini e Morpurgo, architects), aimed to establish a national Italian architecture. The design selected fits the character of the Italian people and their Roman ancestry. The massive masonry quality of the building seeks permanence in history Vertical motives of classic proportions are used, and a great solidity is obtained by the dominance of heavy masonry over relatively small openings. In contrast to this still comparatively isolated effort which suggests a return to traditionalism are many excellent examples of sane modern architecture, as for instance the buildings at the airport in Milan (Luigi Giordani, architect), a seashore colony for the fascist youth organization, A.G.I.P., at Cesenatico (by the architect Giuseppe Vaccaro), and several modern schools and kindergartens

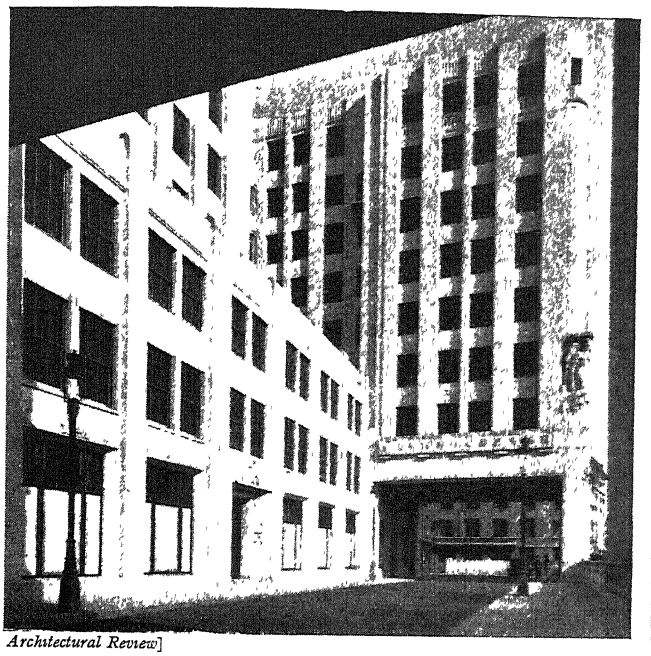
Russia has reverted to traditional classicism for its national new architecture. Moscow's " All Union Agricultural Exposition " paradoxically uses porticoes and columns associated with Imperial Rome.

Of the smaller European countries, Finland is dedicated to the functional architectural conception as expressed in the designs of Alvar Aalto. This architect has become known to the western countries by his Finnish Pavilion at the Paris Exhibition, 1937, and the exhibitions of his work in London, Zürich, Milan, and New York.

Sweden has shown a tendency to move from the national romantic and neo-classic styles to the more modern functional architecture, as for example in the Stockholm Buildings Trades Club (S Markelius, architect) and the new market buildings in Stockholm (Hakon Ahlberg, architect).

On the other side of the Atlantic, the United States government has been a large factor in building, and as such a strong influence on maintaining traditional architecture. The Procurement Division of the Treasury Department is at present engaged in the design and execution of an unusually large number of public buildings. All its work follows the academic traditions and classic patterns for public buildings well established over several decades. Through the government's rigid standards for housing design (" Unit Plans " of the United States Housing Authority) and for the design of homes and apartments (Technical Bulletins of the Federal Housing Administration), little opportunity is given to individual architects to depart from traditionalism.

A good many examples of modern residences, schools, and commercial buildings, as in the East, have risen in the south-west of the United States. The fine quality of the work of the modernist, Neutra, has been an important addition to modern architecture throughout the country. Other western architects have been successful in producing



Architectural Review]
UPPER LEVEL OF THE NEW ADELPHI TERRACE, LONDON

interesting variations to the more traditional American forms of residential design. Many European architects of the modern school who have found German nationalism an obstacle to free expression in architecture have entered the United States to teach and practise in the East and Middle West. The influence of such men as Walter Gropius and Mies van der Rohe is beginning to appear in architectural schools and isolated buildings. Greater acclaim has now come, so belatedly, to the work of the American architect, Frank Lloyd Wright, whose exhibition at the Museum of Modern Art in New York in Jan. 1938 showed his genius and versatility. An outstanding recent example of modern domestic architecture in the romantic charm typical of Wright's work is the forest lodge " Falling Water " at Bear Run, Pennsylvania. Wright's new mushroom-shaped concrete columns used at the S. C. Johnson Company Building at Racine, Wisconsin, show the possibility of developing forms which are, at one and the same time, structural and decorative.

The year 1938 saw the group of commercial buildings in New York known as Rockefeller Centre approaching its final stage of development. As it consists of two theatres and eleven office buildings with a total of four and a half million square feet of rentable area and a variety of interlocking attractions to draw the vast public necessary for its success, it expresses the most advanced type of metropolitan architecture. Two large exhibitions have been constructed for 1939—the New York World's Fair " World of To-morrow " and the San Francisco " Golden Gate International Exposition ". The New York Fair follows the modern fashion for exhibition architecture begun in America at the Chicago Exhibition of " A Century of Progress " in 1933. The San Francisco Exhibition rises as a homogeneous grouping of buildings in romantic fantasy.

An interesting controversy between modernism and traditionalism has centred about the classic design for the proposed Jefferson Memorial at Washington, D.C., by the late John R. Pope. This is indicative of the struggle between progressiveness and conservatism which has penetrated from social philosophies into architecture. Construction has, for the present, started on the traditional lines of the original design.

Modern architecture in the United States has not found the fertile ground offered by Mexico, where much has been accomplished in that direction in the last few years.

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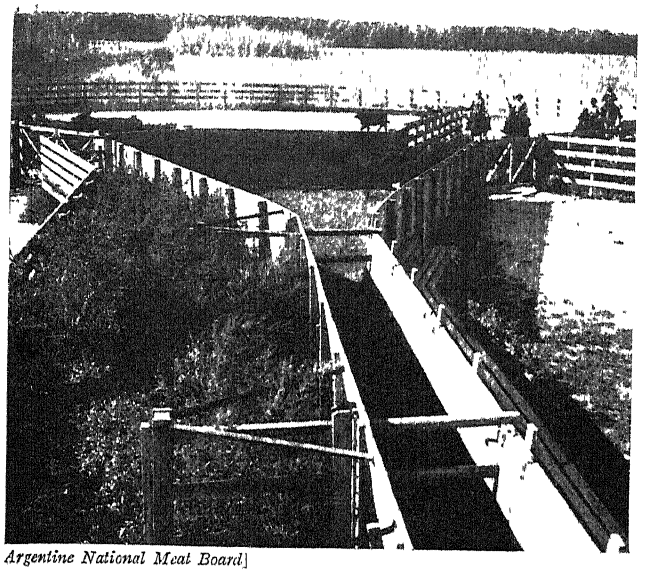
ARGENTINA, South American republic; language, Spanish; president, Roberto M. Ortiz.

Area and Population. Area 1,079,965 sq. miles; population (1914 census) 7,885,000, official est. (Dec. 31, 1937) 12,761,611, with 76·9 per cent native-born of European stock, 3·2 per cent of mixed blood, 19·9 per cent foreign-born (practically all of them Europeans). Estimates made by German sources in 1938 claim 236,755 Germans and part-Germans in the country. The chief cities, with official estimates of population in 1937, are: Buenos Aires, the capital, 2,415,142 (approximately 3,500,000 with its suburbs); Rosario, 509,604; Córdoba, 309,232, Avellaneda (suburb of Buenos Aires), 233,910; La Plata, 192,225; Santa Fé, 139,175; Tucumán, 136,258; Bahía Blanca, 109,660. Twenty-seven other cities have populations in excess of 25,000.

On Feb. 20, 1938, Dr. Roberto M. Ortiz was formally inaugurated president, succeeding General Augustín P. Justo. President Ortiz, the first " self-made " man ever to be chief executive of Argentina, began a relatively conservative policy outlined in his inaugural declaration against non-American entanglements and for democracy, and urged strengthening of national defences and continued balanced budgets.

The new foreign minister, José María Cantilo, conducted a vigorous foreign policy. Early in the year he made " good will " tours to Chile, Brazil, and Uruguay. Adjustment of a minor boundary dispute with Chile over the Beagle Channel islands (in the far south of the continent) was agreed upon in April, and the controversy submitted to the arbitration of the attorney-general of the United States. Trade treaties were made with Chile, France, and Poland, as well as a barter agreement with Italy, under which Argentine wool and hides were traded for Italian-built oil-tankers. Public opinion in Argentina expressed itself strongly against Germany late in the year, and some efforts to settle Jewish agricultural refugees in Argentina were reported. Sr. Cantilo, however, followed a very restrained policy towards Germany, and at the Pan-American Conference (*q.v.*) at Lima in December led the opposition to a strong stand against totalitarianism. At that conference Argentina insisted upon mild expressions of Pan-American policy.

During 1937 Argentina had experienced her greatest prosperity since 1929, but poor crop conditions for 1938 resulted in a serious decline in production, falling-off of exports, and tightening of credit. The congressional elections on March 5 were generally condemned by the Argentine press as fraudulent, and supplementary elections were held in some districts. The result was an administration majority in congress, so that the government was able to put through its general programme without the difficulties experienced in the previous congress. Because of bad economic conditions some reductions were made in the 1938 budget, and that budget eventually (in November) was continued for 1939. Considerable stress was put on public



Argentine National Meat Board]

DRIVING CATTLE INTO AN ENCLOSURE, ON A RANCH IN MONTE VELÓZ PROVINCE, ARGENTINA

works, which were allotted 159,120,900 pesos, and on June 28 there was created a National Council of Public Works. The new council was entrusted with the co-ordination of activities in the 100 million peso annual public works programme, and is so to regulate construction that it will be increased during periods of depression and diminished during times of prosperity. Agrarian loans increased to 337,315,227 pesos, the highest sum since 1915. Approximately 90 million pesos was spent or obligated for the purchase of armaments during 1938. The Trans-Andine railway was purchased from British interests owning it for £750,000 and a formal offer of £9,500,000 (chiefly in bonds) made for the important Central Córdoba railway. In an effort to aid agricultural prices, restrictions on sugar production were enacted by law.

Education. Education is in the hands of national and provincial governments, with 5,100 elementary schools (enrolment 831,994) under national jurisdiction in 1937. Nearly 250 private and national secondary schools had an enrolment of 36,800. In addition there are various special schools and institutes, including 140 adult schools in Buenos Aires. The five national universities and one private have nearly 25,000 enrolment.

Defence. Argentina has an active army of 30,713 men, and a trained reserve of 448,383. The navy is the largest in South America. Unofficial estimates place the air force at more than 250 aeroplanes. Military or naval service is compulsory.

Finances and Banking. The monetary unit is the paper peso. Owing to the sharp decline in exports during 1938, its value fell to approximately 1*s.* 2*d.* for the official (controlled) and 1*s.* for the free peso.

Trade and Communication. Argentina's foreign trade in 1937 aggregated: exports, 2,452,779,000 pesos, comprising agricultural products, 64·5 per cent (a 34·3 per cent increase over 1936); livestock products, 31·4 per cent; forest products, 2 per cent. Great Britain took 27·8 per cent of the exports, the United States 12·7 per cent, with Belgium, the Netherlands, Germany, Italy, and Brazil following. Imports increased 31·7 per cent to 1,557,684,000 pesos, and comprised textiles, fuel, and lubricants, from Great Britain (18·9 per cent); United States (16·4 per cent); Germany (10·3 per cent), Belgium (6·1 per cent); Italy (5·5 per cent), during the first nine months of 1938, exports declined 44·5 per cent to 1,038,453,969 pesos Imports (totalling 1,058,825,019 pesos) were down 1·8 per cent, the United States leading (18·6 per cent), followed by Great Britain (18·3 per cent) and Germany (10·2 per cent).

Argentina has 25,585 miles of railways. Including the Central Córdoba railway, under government control since Feb. 1, 1938, 32 per cent of the mileage is government-operated. The highway system totals 191,536 miles, including 9,320 miles paved roads; of these 34,029 miles are under national control, but half the national roads are impassable except in the dry season. The national highway programme adopted in 1932 was continued in 1938. This calls for construction of a network of 30,000 miles of improved national highway at government expense, and 600,000 miles of secondary highways by the provinces

Agriculture, Manufactures, Mining. The quebracho, source of tannin, has been extensively developed, with an export value in 1937 of 37,937,000 pesos in extract, and 4,815,000 pesos in logs, representing an increase of 18·7 per cent over 1936, so that Argentina supplies two-thirds of the world output. Argentina produced in 1937 an estimated 60 per cent of the entire world supply of maté (Paraguay tea). The country lacks any great mineral wealth other than petroleum, with an output in 1938 of 18 million barrels (estimate). Manufacturing is developing rapidly, but is in no way adequate to supply domestic needs. About 10·75 per cent of the area of the entire country is under cultivation, while 34·4 per cent is devoted to the pastoral industry.

In 1937–38, the production of principal commodities (in bushels) was approximately: wheat, 184,415,000, linseed, 60,746,428; corn, 161,300,000; oats, 47,368,750, barley, 23,535,416; rye, 3,516,071. Except for oats, which showed a very slight increase, production of all of these commodities was from 25 per cent to over 50 per cent less than in the previous year. Corn, in the export of which Argentina normally leads the world, declined 50·8 per cent.

Cotton production declined somewhat in 1937 and considerably more in 1938, with a sharper decline in its export, due to unfavourable weather, but 1,035,000 acres were planted in 1938. In 1937 sugar production totalled 434,514 metric tons, and that of wine 1,269,000 gallons. Fruits are produced extensively in Mendoza province and elsewhere along the eastern slope of the Andes, and in Patagonia, with an export volume of 64,552,493 lb. in 1937.

In 1936–37 Argentina had a total consumption, domestic and export, of 6,730,581 cattle and 1,434,961 hogs. Wool and hides are important, with an annual production of 170,000 tons of wool and approximately 7,800,000 and 9,600,000 hides and sheep skins respectively.

In 1935 a comprehensive industrial census was taken; its results, made public early in 1938, showed the following: 40,613 industrial establishments, with a personnel of 526,495 labourers and administrative and technical employees, who received 733,985,740 pesos compensation in the year ending June 30, 1935. The value of raw materials used totalled 1,963,224,656 pesos with resulting manufactured goods valued at 3,458,041,607 pesos. Industrial activity was largely in foodstuffs, involving 11,564 establishments, with 120,902 employees, 897,093,422 pesos value of raw materials, and 1,267,118,133 pesos value of finished goods. Of principal importance were the meat-packing houses, which employed 27,663 persons to produce products valued at 440,030,565 pesos. (L. W. Be.)

ARMAMENTS, WORLD: *see* WORLD ARMAMENTS

ARMENIAN S.S.R. The number of districts in this Transcaucasian Republic of the U S S R was increased in 1938 by eleven In June, over 99 per cent of the electorate took part in the elections to the Supreme Council of the Republic, and 156 Communists and 100 non-party candidates were returned. One-quarter of the deputies were women. At the first session of the Supreme Council in Erevan from July 12 to 14, the activities of a number of the Commissariats of the Republic (for Agriculture, Trade, Forestry, etc) were sharply criticized On Jan. 3, eight former leading figures in Armenia were executed for treason after a sensational trial In May, a former Chief of the Armenian Silk Trust was shot for the alleged wrecking of silk production on behalf of the Japanese and Italians, and three further agricultural experts were sentenced to death for sowing bad seeds, disorganizing machine and tractor stations, and taking part in a counter-revolutionary nationalist plot The number of members of the Armenian branch of the Soviet Godless League grew from about 6,000 in 1936 to 37,734 in 1938.

Area and Population :

Area 11,583 sq miles.

Population (1933) 1,109,000 (rural, 845,000 ; urban, 264,000 ; 84·7 per cent Armenians ; 9·8 per cent Turks ; remainder Russians, Georgians, Kurds, etc ; birth-rate (1936) 5 per cent, mortality 1½ per cent).

Leading Cities (1936 populations) · Erevan (the capital) (144,300), Leninakan (formerly Aleksandropol) (73,200), Kirovakan (formerly Karaklis) (15,400).

Economic Life 1937 :

Collective farms, 1,071 ; machine and tractor stations, 24, with 1,323 tractors and 390 lorries ; sown area, 1,078,590 acres (44,478 acres cotton plantations).

Total output of land produce, 3,426,700 centners.

Cotton	(1936)	226,200	centners
Horses	(,,)	48,541	,,
Cattle	(,,)	656,406	,,
Small cattle	(,,)	1,035,597	,,
Pigs	(,,)	64,976	,,

Industry: total 1937 output (prices 1926–27): 216·4 million roubles ; power capacity, over 70,000 kwh. ; output of electric power, 258 million kwh.

Budget (1938) : 388 million roubles.

Cultural Life :

Expenditure on cultural needs (1937) 211·6 million roubles

Schools (1936–37) . . 1,200, with 242,000 children

Higher education (1937) : 14 higher educational institutions, 57 technical colleges, 50 research institutes. Total number of students, 17,000.

Miscellaneous :

Illiterates, 7 per cent ; Libraries, 468, with about 1½ million volumes ; Museums, 8 ; Theatres, 17 ; Cinemas, 181 ; Physicians, 711 ; Newspapers published (1936), 66 ; Books published (1936), 649. (S. YAK.)

ARMIES OF THE WORLD. In each country to-day the size of the army, its organization, training, and armament, is being carefully adjusted to the foreign policy which the country concerned is willing to go to war to enforce. The relatively small land forces of the British Empire and the United States, coupled with the absence of conscription, necessitates a defensive policy in foreign affairs. While France has conscription her policy to-day is limited to a defensive one because of the smallness of her population. The defence of her position on the continent of Europe and in North Africa demands an army of a size which can only be raised by conscription. As she must be ready to fight immediately, the necessary efficiency can be obtained only by training all her manhood in peace so that they may be available as trained soldiers the day war comes.

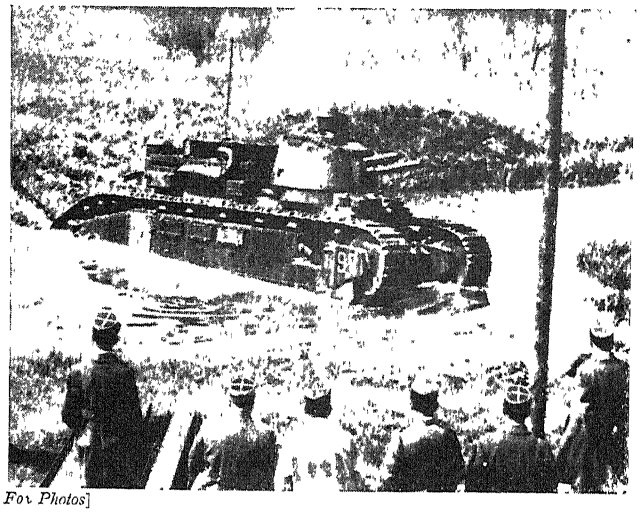
Aeroplanes and Tanks. The two most important questions concerning the proper organization of an army relate to aviation and mechanization. In the panish Civil War several attempts to use tanks alone in mass attacks unsupported by infantry and artillery failed. The largest of these attacks was made with approximately seventy tanks. The habitual method of employment since has been in line, with considerable intervals, supported by artillery fire and infantry.



Associated Press]
BLACK STORM TROOPS REVIEWED BY HITLER AT NUREMBERG, SEPT. 11, 1938

The Nationalist Army has habitually used its heavy bombers to continue from the air the preparatory fire after the artillery has finished its preparation. This heavy bombing is immediately succeeded by the assault, aviation making diving attacks with light bombs and machine-gun fire. The infantry assault accompanied by tanks then follows. The war in Spain has shown that light motorized vehicles will not stand the wear and tear of use off the battlefield nor sufficiently resist the enemy's fire upon the battlefield. The consequence is that the latest type of motor vehicles are built to withstand hard usage and enemy's fire despite the correspondent sacrifice of lightness and speed. Yet the horse and the mule, particularly the pack mule have not yet disappeared from the cavalry, field artillery, and the ammunition and supply trains. Experimentation and the Spanish Civil War show that in many terrains and circumstances they are of more use than mechanical transport.

Infantry. The infantry division remains as during the war of 1914-18 the basic unit of all armies to-day. Post-war developments have steadily tended to increase the proportion of automatic weapons and guns of all types. Thus to prevent the infantry division from becoming too cumbersome to be handled as a unit by the commanding general, a reduction in the number of infantry riflemen had to be made. The U.S. Army in the near future will undoubtedly arm every rifleman with a shoulder automatic.

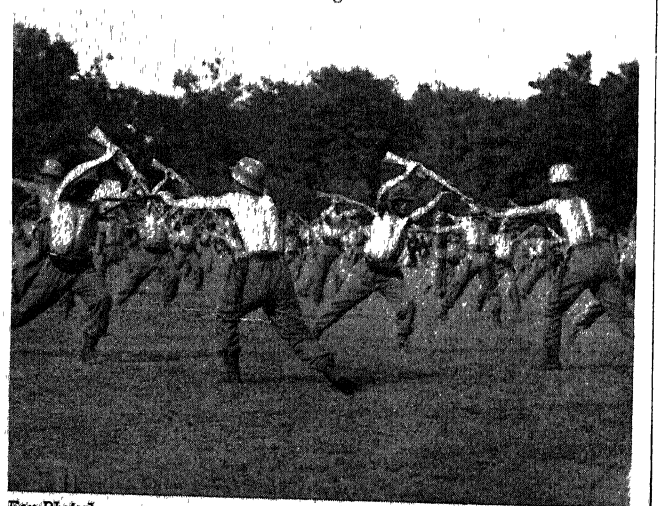


Fox Photos]
A SEVENTY-TON TANK CROSSING A STREAM DURING FRENCH ARMY MANŒUVRES NEAR VERDUN, MAY 1938

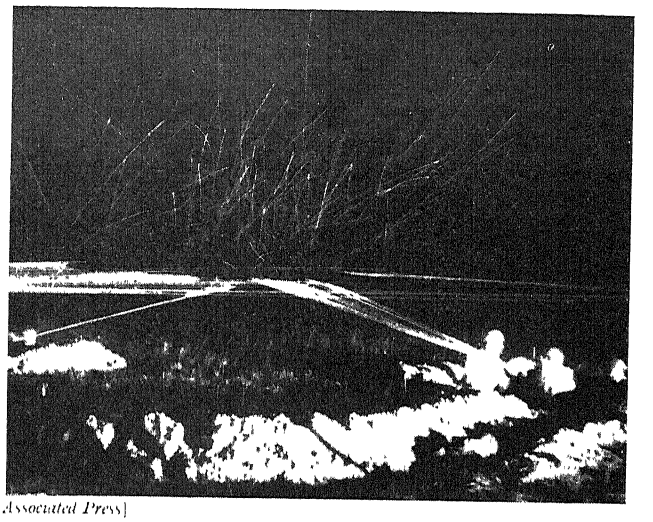
This increase in fire power of the individual soldier will permit a reduction in numbers in a unit without reducing the fire power of the unit The increasing use of motor transport to move the division also made a reduction advisable.

Artillery. There are two new tendencies in the artillery armament of to-day One is a tendency to increase the number of light weapons of less calibre than the 3-in. in close support of the infantry, that is, anti-tank guns, anti-aircraft guns, trench mortars, mountain guns, and light howitzers. The other tendency is to evolve guns with mounts which will permit them to be used for more than one purpose: anti-tank guns which can also fire on aeroplanes and anti-aircraft guns which can be used for ground targets too.

Germany is leading in both of these tendencies. The 77-mm. gun which was formerly the main artillery armament of her infantry divisions has disappeared from these divisions. It is still used, however, in the armoured motor divisions. The artillery of a German infantry division to-day is armed with 105-mm. howitzers for close support of the infantry, with its trench mortars and light anti-tank and anti-aircraft guns, and 150-mm. howitzers and 100-mm. guns for more distant support. Germany has to-day an 88-mm. anti-aircraft gun which has been used in Spain not only against aviation but also for fire against trenches and batteries on the ground.



Fox Photos]
THE HUNGARIAN "DEATH BRIGADE" AT BAYONET PRACTICE. IT IS MADE UP OF PICKED MEN WHO ARE ATHLETES



Associated Press]
U S MACHINE-GUNNERS FIRING FROM FOUR POSITIONS WITH TRACER BULLETS, SEEN GLANCING OFF THE TARGET

Mechanized Forces and Cavalry. There are three types of cavalry division to-day: (1) entirely mechanized, (2) mechanized reconnaissance units, with the mass of the division still horsed, and (3) horse divisions. Russia with about 23 horse cavalry divisions has by far the greatest amount of horse cavalry. The Civil War in Spain shows that, except where a continuous line of trenches exists, cavalry mounted on horses still has an important role to play in war. In the Nationalist Army the cavalry mounted on horses, originally of five squadrons, has been raised to over fifty squadrons. Used in conjunction with bombardment and assault aviation, it has produced excellent results in battle and above all in pursuit after battle of defeated infantry, artillery, and tanks. Germany is the leader in having an independent mechanized force directly under the high command, with a "Panzer Corps" of at least two mechanized divisions. Each division consists of 405 tanks, two regiments of motorized infantry in armoured trucks, two motorized artillery regiments, one of 77-mm. guns, the other of 105-mm. howitzers. Russia is reported to have from two to six mechanized divisions in her army. Great Britain has one independent mobile division consisting of two mechanized brigades, one tank brigade, one infantry battalion, and service troops. The Japanese Kwantung army is motorized and mechanized, but the details are secret. France has one light mechanized



Fox Photos]
POLISH LIGHT TANKS PASSING THROUGH WARSAW ON THEIR WAY TO MANŒUVRES, SEPT. 1938

Land and Air Forces of certain Nations of the World

November 1, 1938

Nation	Armies		Air Forces		Total Land and Air	Per cent of Population
	Active	Trained Reserves	Active	Trained Reserves		
USSR	1,500,000	16,500,000 (*a*)	80,000 (*b*)	—	18,000,000	9·4
Italy	917,991	6,494,177	103,555 (*o*)	331,428	7,847,151	17·63
Japan	1,500,000	4,748,000	21,500	26,100	6,248,000	8·6
France	725,759	5,300,000	64,650 (*o*)	6,220	6,096,629	14·2
Germany	750,000	3,150,000	206,000 (*c*) (*o*)	20,000	4,126,000	5·2
China	2,000,000	—	7,500	—	2,000,000	0·4
Czechoslovakia (*d*)	205,000	1,685,000	6,600	—	1,840,000	12·5
Rumania	212,000	1,616,000	12,000	—	1,828,000	9·4
Yugoslavia	166,237	1,649,000	8,112	16,795	1,815,237	11·8
Poland	266,000	1,447,000	9,350 (*e*)	—	1,713,000	5·0
British Empire	382,770	624,800	87,950 (*f*)	26,175	1,121,695	0·25
Great Britain	208,500	365,000	83,000 (*f*)	25,000	681,143 (*g*)	1 43
Belgium	96,298 (*h*)	670,000	2,319	60 (*i*)	768,677	9 1
Bulgaria	51,610	650,000	1,610	—	701,610	11·17
Hungary	50,000	650,000	2,160	—	700,000	7·9
Turkey	132,375	529,425	3,375	—	661,800	4·1
Sweden	48,000	575,000	1,000 (*o*)	—	624,000	9 9
Greece	79,796	501,500	2,215 (*o*)	4,535	588,046	8·4
Portugal	54,814 (*j*)	460,000	986	—	515,800	7·1
United States	183,447	310,484	20,341	5,554	493,931	0 38
Switzerland	318 (*k*)	450,000	5,000	—	450,318	10·8
Lithuania	25,400	287,000	775	—	312,400	12·4
Brazil	98,712	213,318	2,700	—	312,030	0·72
Finland	29,300	260,700	1,300	—	290,000	12·6
Argentina	49,705	232,798	2,023	—	282,503	2·21
Netherlands	41,200	200,000	600	—	241,200 (*l*)	2·8
Latvia	20,700	205,000	335	—	225,700	11·8
Chile	36,654	160,000	1,872	850	196,654	4·28
Norway	14,200	120,000	960	—	134,200	4·6
Estonia	11,400	108,600	540	—	120,000	10·1
Mexico	48,526	63,407	646	—	111,933	0·59
Bolivia	24,713	82,187	411	—	106,900	3·37
Paraguay	12,170	87,934	170	—	100,104	10·0
Denmark	11,000	89,000	975	—	100,000	0·27
Colombia	14,810	50,000	1,320	—	64,810	0·75
Cuba	14,608	47,888	205	109	62,496	1·5
Ecuador	5,450	40,000	450	—	45,450	1·18
Guatemala	6,000	30,000	100	—	36,000	1·46
Uruguay	8,832	24,037	318	—	32,869	1·5
Peru	11,000	20,000	1,677 (*o*)	80	31,757	0·52
Venezuela	13,700	3,000	200	—	16,700	0·48
Dominican Republic	3,029	12,000	18 (*o*)	—	15,047	0·94
Honduras	2,455	2,602	75	—	5,057	0·50
El Salvador	3,468 (*m*)	6	98	6	3,474	0·21
Haiti	2,715	551 (*n*)	—	—	3,266	0·13
Nicaragua	2,453	487 (*p*)	44	—	2,940	0·29
Costa Rica	574	—	—	—	574	0·09

(*a*) Includes 9,000,000 partially trained reserves. (*b*) Army and Navy. (*c*) Includes anti-aircraft units (*d*) As in Sept 1938. (*e*) 1935 figures. (*f*) Air forces separate from Army except in Ireland and New Zealand. (*g*) Includes British troops in India. (*h*) Includes 7,476 gendarmes and 13,573 colonial troops. (*i*) Pilots only. (*j*) Includes 16,000 police and 10,500 colonials. (*k*) Officers and non-commissioned officers only. (*l*) Does not include colonial troops. (*m*) Includes Guardia Nacional. (*n*) Rural police. (*o*) Air forces separate from Army. (*p*) Urban police.

division (cavalry) and is organizing another. In Italy the mechanized forces are under army unit commanders.

Army and Navy Air Forces. In the United States and Japan, the army and navy each have their own air forces. In other countries the air forces are independent of the army and navy except that in Russia the land forces, air force, and sea forces are all parts of the same organization. The tendency is towards the U.S. and Japanese system as more and more the pilots of independent air forces assigned for duty with the navy remain with the navy. (*See* Air Forces.)

Maginot Line. In France the Maginot Line is to be extended to include the Belgian border in the north and part of the Swiss in the south. The year 1938 saw the construction of a similar line by the Germans, facing the Maginot Line. It is called the Siegfried Line. The Swiss have built a fortified line from Basle to Lake Constance. There are numerous reports that Russia is engaged in constructing fortified lines along her western or European frontier and her eastern Amur river frontier. It is also reported that Rumania plans to build on her Russian and Hungarian frontiers similar fortified lines. (*See* also Air Forces; Munitions of War; Navies of the World; World Armaments.)

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Culmann, *Tactique d'artillerie*, Charles-Lavauzelle, Paris, 1914; C. Rougeron, *L'Aviation de bombardement*, Berger Levrault, Paris, 1937; von Einmannsberger, *La Guerre des chars*, Berger Levrault; the American, British, French, and German Service Journals. (H J Re)

ARMY, BRITISH. The British Army comprises several different parts. First comes the Regular, or professional, Army. As voted by parliament, this nominally consists of some 164,000 officers and men, but a further 57,000 stationed in India belong to it, although while serving there their cost is borne, not by the British public, but by the Indian taxpayer. There is the Army Reserve, consisting of men who have returned to civil life after completing their service with the colours, but remain for a further period liable to recall in emergency, to make units up to war-strength on mobilization or fill up gaps caused by casualties in the early stages of war. Its size varies according to the number of men whose colour-service expires at any period, but is at present about 140,000. Then there are the two main sections of the citizen-force proper—the Territorial Army (*q.v.*), numbering over 200,000, and the comparatively new Supplementary Reserve, which is largely composed of technicians and is intended to meet the emergency needs of the Regular Army, at present it has recruited to barely half of its authorized establishment of 56,000. Beyond these is the Officers' Training Corps, formed of a Senior and a Junior Division, whose units are raised in the universities and public schools respectively.

It is a common tendency to speak of Britain's "small army", and the phrase is justified by comparison with the armies of the larger continental powers, especially if only the Regular Army is in mind. But it is worth realizing that the sources which have been enumerated, reckoning in the time-expired Territorials who are still fit for service, provide an available total of not much less than a million trained men. Besides them there are the professional and volunteer forces, both white and native, that are raised in the various overseas territories—in India alone, for example, these total over 200,000 men.

The Regular Army has many points of difference from the armies of the Continent. While they are large, it is small; while they are raised by conscription, it depends on voluntary enlistment; while they have short-service, it has long-service—seven years is the normal; while they are raised from all classes, it is drawn from the poor. But there is also a difference of purpose. The primary object of the Continental armies is the defence of their own country—a euphemism which embraces the attack on neighbouring countries; whereas by contrast the primary duty of the British Army—until a significant change was defined early in 1938—has been, and its largest function still is, the defence and policing of the British Empire. These duties have governed its basic organization. Indeed, in the nineteenth century it became so predominantly a colonial service army as to become quite unfit, both quantitatively and qualitatively, to face the contingency of a European war.



Fox Photos]
ANTI-TANK WIRE BEING ERECTED DURING A DEMONSTRATION AT ALDERSHOT

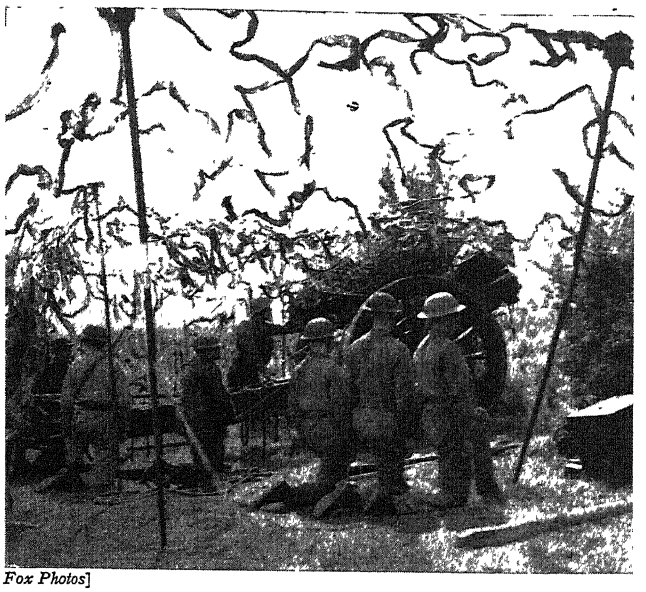
Like all institutions, the British Army requires a periodical re-examination to see whether its role has been adapted to the current Imperial policy and to developments in the methods of warfare, and whether its organization and distribution fit its role. The British Army has had a great capacity for improvisation; it has been slower to recognize the necessity for reorganization. During the last hundred years two, and only two, extensive reorganizations have been carried out. The first was by Cardwell seventy years ago. The second was by Haldane thirty-five years later.

Despite the improvement which they brought in many directions, these two reforms fell short of a scientific solution of the problem produced by the evolution of British policy and the evolution of warfare. Following belatedly on European developments, a General Staff had been created, but merely as an additional department. Vested interests hindered a comprehensive reorganization of the Staff, and the fusion in it of the pre-existing departments concerned with personnel and supply.

After the World War, despite all its dearly bought lessons, the reconstitution of the Army was accompanied by no major change in design. It was based merely on a return to the pre-war basis. The question of any thorough re-examination and adjustment seems repeatedly to have been shirked.

A new impetus came in 1937 with the arrival of Mr. Hore-Belisha in the office of Secretary of State for War, and in the following winter the long-delayed re-investigation of the role of the Army was carried out. It produced, in the sphere of organization, a decision to adopt the principle of reducing the size of divisions, and also of units, while increasing their ratio of fire-power to man-power. The divisions were to be of two types—a motorized division, based on the light machine-gun; and a mechanized armoured division, based on the tank. The first type would normally comprise nine battalions instead of the former twelve. The battalions were each to have fifty of the new light machine-guns—the Bren guns—a proportion of which will be borne in armoured carriers. A number of heavy machine-gun battalions were, however, to be retained to serve as corps troops. The artillery were to be reorganized in batteries of twelve guns apiece, instead of six, so that fire-power can be better concentrated and superfluous personnel saved. The artillery are also taking over from the infantry the duty of handling the two-pounder anti-tank gun, although the infantry, in partial compensation, are being given anti-tank rifles of a war pattern.

There have been changes no less great in the strategic conditions which affect the role of the Army. New problems have arisen in each of its possible spheres of employment—for the defence of the home country, the defence of the Empire, and for any operations on the Continent which may be required in fulfilment of obliga-



Fox Photos]

A SIX-INCH GUN CAMOUFLAGED WITH RAGS SPREAD UPON WIRE-NETTING AT MANŒUVRES NEAR STOCKBRIDGE, AUG. 1938

tions. Following this study of the role of the Army in the light of modern conditions, the existing scale of the Regular Army has been taken as adequate subject to some small increases in the technical arms, but the available forces are being reorganized and to some extent redistributed The chief change is that the forces in the Middle East are being reinforced and a local strategic reserve constituted there.

In addition to the organizational reforms outlined in the Secretary of State's speech in March 1938, many improvements were foreshadowed in the conditions of service, training, and equipment. Measures to implement these intended reforms were announced at intervals during the succeeding months, if in some important respects they did not prove to be as full or as rapid as had been hoped. From the infantry in Palestine two additional divisions, the seventh and eighth, have been formed, while a commander and staff have been appointed for a Mobile Division in Egypt, although the implied increase of the few mechanized units already there has not yet been carried out. At home the one mechanized Mobile Division remains as it was, and its reorganization and expansion into two of a handier type is still under discussion; the five infantry divisions have been partially reorganized on a smaller pattern, but the number of them has not yet been increased in fulfilment of the anticipations of last winter; and their announced reconstitution on a completely motorized basis has not taken place. In October, however, it was announced that the field units of the Territorial Army were to be reorganized to provide nine normal-type infantry divisions, three smaller-type motorized divisions, and the components of a mechanized Mobile Division; this implies their eventual provisions with complete modern equipment.

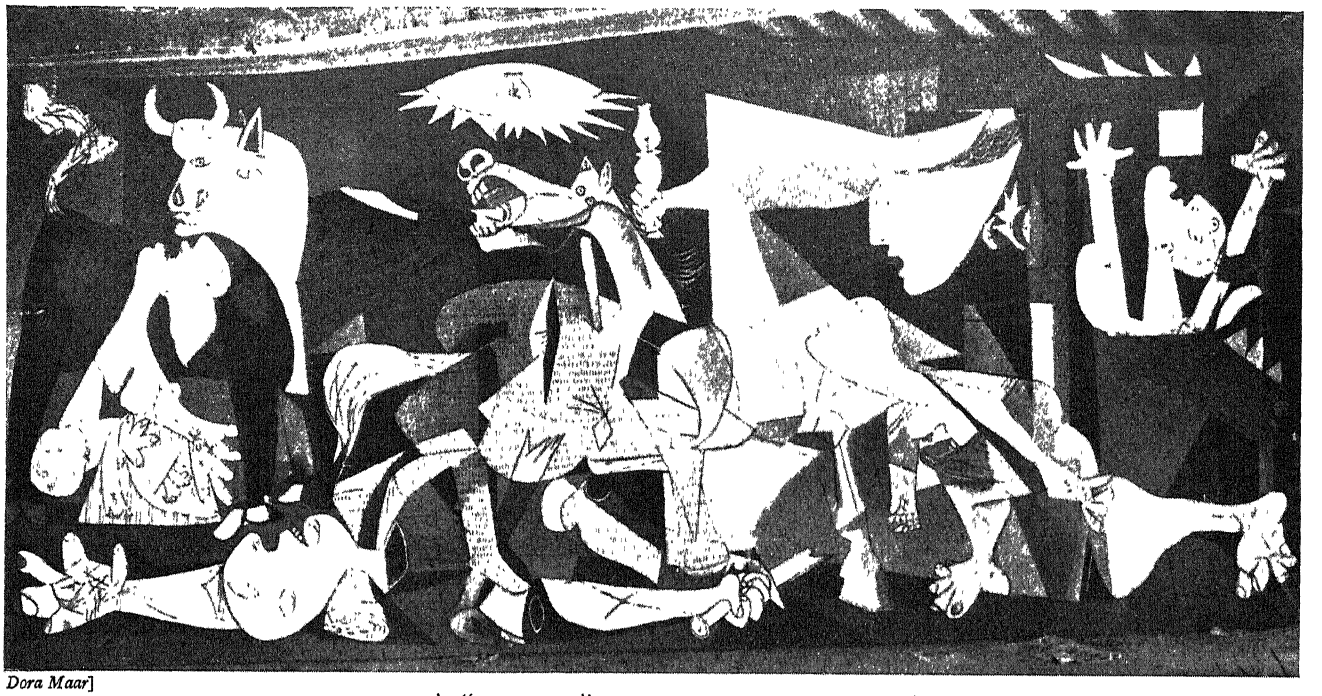
More disappointing, and dangerous, have been the delays in reorganizing and expanding the anti-aircraft forces devoted to the defence of the country. Their deficiencies in equipment were made plain in the September crisis. Fresh assurances, however, have been given of improvement in the supply, while shortly after the crisis a beginning was made with the long-awaited scheme for local defence against the danger of low-flying attack.

In the sphere of internal reform a larger measure of fulfilment has been achieved. The promised improvements in the conditions of service of the men were given effect in the spring, although their effect on the flow of recruits, especially for the infantry, has not been as rapid as could be desired—the shortage is still some 20,000 men. Greater opportunity of promotion has been offered by the creation of a new class of warrant officers as commanders of the minor units. For the officers' prospects a more direct improvement came from the introduction in July of a time-scale for promotion. It brought a list of no less than 2,000 officers—roughly, a third of the subalterns and captains in the Army—promoted in the *Gazette* on Aug. 5. Professional opportunity has been increased by reducing the Staff College course from two years to one, and creating a higher course for the best graduates. (B. H. L H.)

ART EXHIBITIONS. The year 1938 opened with the Exhibition of Seventeenth-century Art in Western Europe at the Royal Academy (Jan. 3–March 12), the first of a projected series devoted to a particular period. At the British Museum a comprehensive show of Drawings and Etchings by Rembrandt occupied the King's Gallery. The Mars (Modern Architectural Research) group gave an instructive exhibition at the New Burlington Galleries. A fine series of early Continental works was shown at the Burlington Fine Arts Club Early in the year A Century of English Caricatures and Customs (1750–1850) was the subject of an exhibition at the Musée des Arts Décoratifs, Paris. In February, at the house of Sir Philip Sassoon in Park Lane, the important exhibition of Old London Arts and Crafts was held in aid of the Northern group of hospitals. An important event was the Exhibition of British Art from Hogarth to the Present Day, opened at the Louvre on March 4, for three months. The exhibition of Contemporary Sculpture, mostly foreign, at the Tate Gallery, aroused a protest from the director in his capacity as adviser to the Customs. In May the Royal Academy featured Coronation pictures, the London Portrait Society had its tenth showing at the New Burlington Galleries, and at the Brighton Galleries were Works in Tempera. At Tooth's (London) Edward Wadsworth's exhibition gave place to Augustus John's West India Pictures, closing June 11. Early English Water Colours were shown at the Fine Art Society; A. J. Munnings, R.A., and the late George Sheringham shared the Leicester Galleries.

Exhibitions were held in June at the following galleries: Barbizon House (The Barbizon School); Matthieson Gallery (A Century of French Drawings from Prudhon to Picasso); Wildenstein's (Women of France in the Eighteenth Century; and Contemporary French Paintings); Sabin's (Fifty Drawings by Rowlandson); Agnew's (Fine Italian and Dutch Pictures); Ifan Kyrle Fletcher's (Gordon Craig's Woodcuts and Drawings); Whitechapel (Contemporary British Art); Leicester Galleries (Paintings by William Nicholson and Paul Nash); Rembrandt Gallery (Paintings by A. S. Hartrick); New Burlington Galleries (Paintings by Beltran-Massés).

The important Exhibition of Modern Silverwork was held at the Goldsmiths' Hall from July 4 to 16. At Reid and Lefevre's The Tragic Painters (Van Gogh, Gauguin, Modigliani, Rouault, Pascin, and Utrillo) were on view. Three Centuries of American Art were illustrated at the Jeu de Paume Museum, Paris. In July also was held an Exhibition of Twentieth-century German Art, mainly by Jewish refugees or German artists proscribed for their unorthodox concepts of art. Other summer displays were a memorial exhibition (pictures and sculpture) by Glyn Philpot, R.A. (Tate Gallery); the third Summer Exhibition



Dora Maar]

PABLO PICASSO'S "GUERNICA", PHOTOGRAPHED IN THE ARTIST'S STUDIO

by members of the Royal Institute, and Sculpture by Despiau at Wildenstein's, pictures and sculpture illustrative of The Dance at the Leicester Galleries; and Drawings and Etchings by Goya at the Victoria and Albert Museum. In the autumn, the Exhibition of Canadian Art was opened at the Tate Gallery, Early British Masters were on view at Agnew's, the Arts and Crafts Society's Jubilee Exhibition was held at the Royal Academy. A representation of the modern École de Paris was given at Reid and Lefevre's, and a selection from Fifty Years of Painting by Sir W. Rothenstein went to the Leicester Galleries. The Fifth Annual Antique Dealers' Fair, at Grosvenor House, opened on Oct. 22 for two weeks. In the same month an important series of Spanish paintings from El Greco to Goya, in aid of sufferers in the Spanish Civil War, was placed at the New Spanish Gallery. In similar cause Picasso's "Guernica" was shown at the New Burlington Galleries. At the close of the year the Royal Society of Oil Painters' show at its Piccadilly headquarters was followed by the 47th exhibition of the Royal Society of Portrait Painters. Marine Paintings, a collection formed by Capt. Bruce S. Ingram, was on loan at the National Maritime Museum.

The principal art event in Italy was the Bimillenary Exhibition in commemoration of Augustus Cæsar, which closed Sept. 23. At the Boymans Museum, Rotterdam, Dec. 25 (1937) till February, was held an Exhibition of works by Pieter Saenredam of Haarlem, painter of churches, and from June to October, Old Master-works of Four Centuries. The Amsterdam Municipal Museum showed French Painting from 1800 to 1900. (H. G. F.)

In the United States there were a number of shows arranged both by museums and dealers devoted to the work of one man or a particular period. Several were in honour of twentieth-century artists: Friesz could be seen at Durand-Ruel; Braque, Oskar Kokoschka, and Ernst Barlach at the Buchholz Gallery; prints by Käthe Kollwitz at the Kleemann Galleries; Picasso at the Valentine Gallery; Henri Matisse at Pierre Matisse's; Juan Gris at Seligmann's; Bonnard and Vuillard and George Grosz at the Art Institute of Chicago; Alexander Calder's mobiles and stabiles at the Smith Art Gallery, Springfield, Massachusetts; a summary of the activities of the Bauhaus (1919–28) at the Museum of Modern Art, New York. Memorial and retrospective exhibitions were held for William Glackens at the Whitney Museum, New York, and for Maurice and Charles Prendergast at the Addison Gallery of American Art, Andover, Massachusetts.

Among the most interesting of the exhibitions devoted to old masters or specific periods were: fifteenth- and sixteenth-century Venetian painting, at Knoedler's and at the Palace of the Legion of Honour in San Francisco; *Italian Gothic and Early Renaissance Sculptures* at Detroit; *French Art of Ten Centuries* at the Morgan Library, New York, *Paintings, Drawings and Prints by the Two Tiepolos* at the Art Institute of Chicago; *Tiepolo and His Contemporaries* at the Metropolitan Museum of Art; Benjamin West at the Pennsylvania Museum of Art, Philadelphia, John Singleton Copley, a bicentenary exhibition, in the Boston Museum of Fine Arts; *Masterpieces of Dutch Painting* at the Museum of the Rhode Island School of Design in Providence; Gros, Géricault, and Delacroix (organized by Knoedler's and seen also at the Art Institute of Chicago); Piero di Cosimo at the Schaeffer Galleries.

There were many exhibitions in the United States and Europe devoted to nineteenth-century French art. The Gangnat Collection of Renoirs (sent to America on indefinite loan) was shown at Philadelphia early in 1938; posters by Toulouse-Lautrec at Marie Harriman's; *Boudin to Cézanne* at Durand-Ruel's; Constantin Guys and *The* 1870's at Carroll Carstairs'.

Five hundred ancient Chinese bronzes from American collections were on display at the Metropolitan; bronzes and ancient Chinese art at Yamanaka and Company; Chinese bronzes lent from the Mrs. E. R. Randon Collection at the Brooklyn Museum of Art. The *Swedish Tercentenary Art Exhibit*, assembled in Sweden, circulated throughout the United States. Contemporary American art was to be seen at Wildenstein's, London. Goyas from private collections and museums in France were exhibited at the Jeu de Paume, Paris. English painting was seen at the Louvre and Persian art at the Bibliotheque Nationale.

The four-hundredth anniversary of the death of Albrecht

Altdorfer was commemorated at the Neue Staatsgalerie, Munich.

In Italy foreign countries participated largely in the twenty-first Venetian Biennial. A special showing of Neapolitan painting (1600–1900) was held in Naples and one of Genoese painting (1600–1800) in Genoa.

ART GALLERIES AND ART MUSEUMS. The centenary of the National Gallery, London, was commemorated in 1938 by the opening of a small additional room intended primarily for temporary exhibitions of works selected from the gallery's own collections. Among the new acquisitions, perhaps the most outstanding are Rembrandt's "Portrait of Saskia as Flora", from the collection of the Duke of Buccleuch, and Van Dyck's "Virgin and Child adored by the Abbé Scaglia", presented by Mr. Anthony de Rothschild. There was a change of direction at the Tate Gallery, London, where Dr. John Rothenstein succeeded Mr. J. B. Manson; and a new room of modern British painting has been opened. At the British Museum the new Parthenon room is reaching completion, and a gallery of Buddhist Art has been arranged. The paintings at Hampton Court have been rearranged and the galleries reopened. Notable among several new provincial museums in Great Britain is that at York Castle where the old female prison has been adapted to house a fine collection of local antiquities formed by Dr. Kirk of Pickering. His gift includes a number of old shop-fronts, mainly from Yorkshire towns, which have been set up in the courtyard. This museum represents a real attempt at a folk museum, illustrating the history of daily life and popular crafts in its own region.

France. The most important new museum opened during 1938 in France is the Musée de l'Homme in Paris. This occupies one wing of the Palais de Chaillot, the new Trocadéro, and contains the French national ethnographical collections, directed by Professor Paul Rivet. Its arrangement is lucid and simple, well planned, and economically achieved. The other wing of the new building houses the Musée de Sculpture Comparée. Reorganization in the Louvre goes on apace; the new arrangement of the sections of applied art and oriental antiquities has now been completed. The evening openings of the excellently illuminated galleries have proved so popular that the extension of the scheme to other museums is contemplated. An important recent bequest to the Louvre is the Walter Gay collection of drawings exhibited last spring in the Musée de l'Orangérie side by side with paintings by Goya from French museums.

Germany. Political developments in Germany have brought about many changes in the personnel of museum staffs, particularly in Vienna; and the reorganization of collections to illustrate the national and racial principles of the government has been undertaken in many museums. At Saarbrücken the new Saarland Museum was opened in March 1938. It includes the collection of the old Heimat-Museum, enlarged by gifts from the Ministry of Propaganda and other sources. The Schlossmuseum in Berlin has opened two new rooms for German rococo art.

Holland and Belgium. Two particularly fine paintings have recently been acquired by the Museum Boymans at Rotterdam: "Christ at Emmaus" by Vermeer, and "Portrait of a Man" by Rembrandt. Both were discovered by Dr. Bredius. A new Musée Royal des Arts Décoratifs Contemporains has been founded in Brussels by royal decree, and at Antwerp a new Print Room is to be established, in which artists who worked in Antwerp will be represented.



National Gallery]

"PORTRAIT OF SASKIA AS FLORA", BY REMBRANDT

Scandinavia. The house and collections bequeathed to the Swedish nation by the Duchess Hallwyl were opened to the public in Stockholm in May 1938. The Hallwyl Museum presents a typical picture of the home of a cultured Swedish aristocrat of the late nineteenth century. Dr. Paul Nørlund has succeeded Dr. Mackeprang as director of the Danish National Museum in Copenhagen.

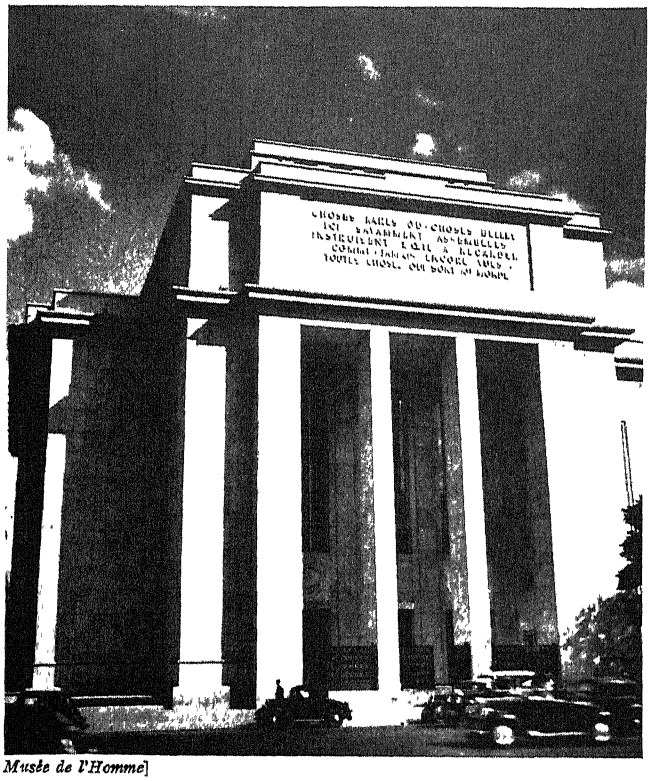
Poland. The new building to house the Polish National Museum in Warsaw, which has been in construction since 1927, was opened in 1938. The National Museum, which was founded in 1862, now has 79 exhibition rooms in which to display its extensive collections. A Museum of Old Warsaw is in preparation.

U.S.S.R. The exhibition of the Life and Times of Pushkin held in 1937 has now been put on a permanent footing as the State Pushkin Memorial Museum in Moscow. In Moscow too a Maxim Gorki museum has been opened.

Other Countries. The fine Palestine Archæological Museum was opened in Jan. 1938; a Museu Nacional de Belas Artes, under the direction of Mr. Oswaldo Texeira, has been founded in Rio de Janeiro; and a new building has been erected to hold the treasure of the Imperial Museum of Nara in Japan.

The year was one of steady progress in the museum world, despite the influence of the September crisis, which, in France and England at least, brought new developments to a standstill and the problem of arrangements for the protection of museum treasures in time of war very much to the forefront. Both national and League of Nations committees have been set up to collect and disseminate information about the best protective measures which can be taken.

See *Mouseion*: *Suppléments mensuelles* (Office international des Musées, League of Nations); *The Museums*



Musée de l'Homme]

THE CENTRAL PAVILION OF THE MUSÉE DE L'HOMME, PARIS

Journal (The Museums Association, London); *Museumskunde* (Berlin). (E. S.)

United States. Throughout the United States during 1938 there was considerable building going on to improve existing museum structures and to create new ones: the new building of the Museum of Modern Art in New York is in progress and will be completed in the autumn of 1939, a $1,000,000 five-story building of concrete and glass, with marble facing. The Museum of Modern Art extended its sphere of influence by opening a branch museum in Washington, D.C.

The most outstanding opening of a new museum in the United States was that of the Cloisters, the mediæval branch of the Metropolitan Museum of Art, New York City, on May 14, 1938, in the new building on the summit of Washington Heights, overlooking the Palisades and the Hudson River. There are various departments and collections represented in this building: that assembled by the late George Grey Barnard, purchased by John D. Rockefeller, Jr., in 1925 for the Metropolitan museum; as well as many new superb acquisitions—all gifts of Mr. Rockefeller—such as: Romanesque stone sculpture, stained glass fragments from the Gothic period, two frescoes from an Italian monastery, various doorways, the finest set of fifteenth-century tapestries, an unusual fourteenth-century statue of the Virgin and Child. The land in Fort Tryon Park was also presented by Mr. Rockefeller, with $2,500,000 for the building. The Cloisters contains one of the finest mediæval collections known; cloisters from five French abbeys form the core, with an original chapter house, a modern Gothic chapel, a reconstructed chapel, also eight galleries for exhibitions.

New York University established an institute of fine arts, with the acquisition of the five-story residence of the late Paul M. Warburg at 17 East 80th Street—close to the Metropolitan Museum of Art.

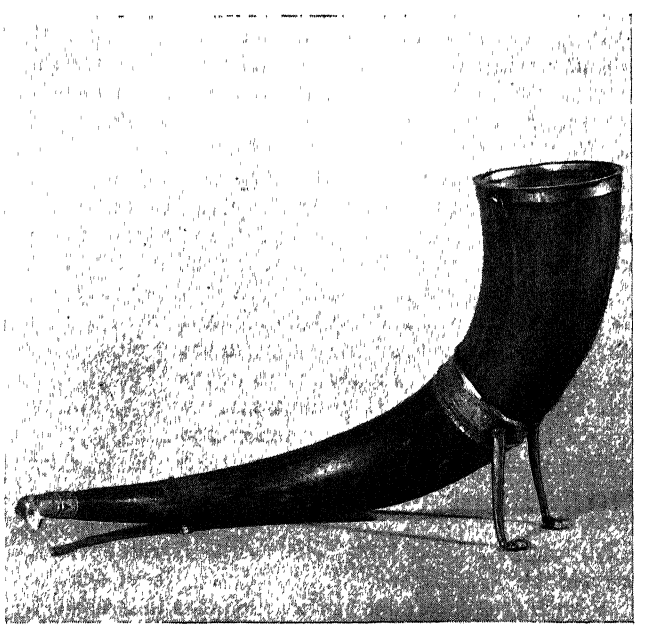
Mrs. William O. Goodman, of Chicago, has made many gifts this year for the advancement of art: her large and splendid collection of pewter was given to the Art Institute of Chicago, and the Goodman Memorial Wing at the Lyme Art Gallery, Old Lyme, Conn., was opened this summer. Likewise the magnificent gift of $150,000 established the William Owen and Erna Sawyer Goodman fund at the Art Institute of Chicago. Mr. Robert Allerton of Chicago gave over $75,000 for the addition of a new wing for decorative arts at the Art Institute of Chicago.

Various colleges and universities in the United States opened new museum buildings to develop the activities of the fine arts departments, in Iowa, Armstrong Hall, at Cornell College, in Mount Vernon, in Ohio, at Oberlin College, the Dudley Peter Allen Memorial museum was added through the generosity of Mrs. F. F. Prentiss of Cleveland, Ohio. Other museums were established in Florida, at Palm Beach; in Delaware, at Wilmington; in Ohio, the Akron Institute opened its new home remodelled for museum use. In the District of Columbia at Washington, the bill for the establishment of the Smithsonian Gallery of Art was passed. The cost of the building, the equipment, and the collection will be sought through private gifts. The site chosen will probably be on the south side of the Mall opposite the National Gallery of Art now under construction.

The Pennsylvania museum was bequeathed $50,000 by the late Arthur H. Lea to change its name to the Philadelphia Museum of Art.

New art museums or art wings are planned for Oxford, Mississippi; Tulsa, Oklahoma; Wilmington, North Carolina; and Williamsburg, Virginia. The competition for an art centre at Wheaton College, Norton, Massachusetts, was decided and the plans are going forward.

The Federal Art Project, Works Progress Administration, made great strides forward in familiarizing the public with its aims through the unusual exhibition held at the Art Institute of Chicago during the summer. Several new art centres were established by the Federal Art Project to carry on the important work of bringing art to the people; the 48th community art centre was established at Sioux



A. C. Cooper & Sons]

THE PUSEY HORN. ENGLISH, SILVER GILT MOUNT OF XV CENT., FROM THE COLLECTION OF W. R. HEARST. SOLD FOR £1,900 AND SINCE PRESENTED TO THE VICTORIA AND ALBERT MUSEUM

City, Iowa, and in Salt Lake City, Utah, an important new centre was created.

ARTHRITIS: *see* RHEUMATIC DISEASES.

ART SALES. On Feb 1 at Sotheby's two English sale-room records were broken when Durer's "The Great Fortune" (with high-crown water-mark) brought £290 and a second state of Rembrandt's "St. Francis Praying beneath a Tree", £240. At Christie's first important sale (Feb. 7–9), the remaining contents of Norfolk House, St. James's Square, totalled £9,962 10s., two William and Mary mirrors fetching £651 The Norfolk pictures at Christie's rooms on Feb 11 reached £8,733, including an early French triptych (£4,305) On Feb. 25, also at Christie's, 65 pictures were sold for £22,395, of which 53, from the collection of W. B. Chamberlain of Hove, accounted for £12,557, a portrait of Rembrandt's father fetching £7,350 The 31 lots of fine French furniture, tapestry, and objects of art sent by Mrs. George Rasmussen to Christie's on Feb. 24 realized £8,600 At Christie's again, on April 6–7, the French and Italian Renaissance objects of art, sold on the retirement of Mr. George Durlacher, totalled £12,721; and on April 8 a sale of 148 pictures by early masters realized £21,441, including £13,504 from the 65 paintings of the Dutch school acquired by the late Dr. Eduard Beith. On April 26–27 at Sotheby's, the Stephen D. Winkworth porcelain, pottery, and English furniture realized £11,372 15*s* An outstanding sale at Christie's, June 22–25, was the Mortimer Schiff Collection of works of art, furniture, tapestry, sculpture, etc., which totalled £101,948, a record being created at £14,700 for a Rogier Van der Weyden, "The Dream of Pope Sergius". Another important sale at Christie's in June was the Chinese enamelled porcelain acquired by Jakob Goldschmidt of Berlin, 219 lots bringing £24,272. The Chipchase Castle silver obtained £10,713 on June 28 (Christie's). On July 1 Messrs. Christie sold the Denbigh pictures from Newnham Paddox for £19,772, to which the Van Dyck portraits contributed £8,552; and on July 8 they took £15,994 for pictures and drawings from the Brocklebank, Durlacher, and Stanley of Alderley collections.

On Oct. 1 began the ten days' sale at Rufford Abbey conducted by Messrs Knight, Frank & Rutley, in conjunction with Christie's. The works of art accumulated by the Saviles during three centuries produced £25,118. The pictures, which were sent to Christie's in London, realized £40,995 on Nov 17 and 18. An interesting art sale was held at "Formakin", Renfrewshire, where the collections formed by M. J. A. Holms were sold, a Tabriz carpet bringing £3,000. Of the pictures sent to Christie's from Cave Castle, Yorks, on Nov. 25, the principal item, a Ruisdael ferry scene, reached £2,520. The W. R. Hearst collection (second part) of rare early silver from St. Donat's Castle, Wales, sold at Christie's on Dec. 14 for £41,882.

Of Continental sales, among the most important were Old Master Drawings from the fourteenth to the nineteenth century, the property of an Italian collector, conducted early in the year by Weinmüller at Munich; the very extensive and valuable collections of the late Sig Luigi Pisa in September at Venice; and at the end of November the sale of old engravings by Messrs. C. G. Boerner of Leipzig, which brought 100,000 Reichmarks At Amsterdam, also in November, the important collection of Old Masters which belonged to the late A. W. M. Mensing was sold by Messrs. Mensing et Fils. (H. G. F.)

The combined value of art properties dispersed during last season at the three New York art auction galleries was $3,954,593. The largest single sale of strictly art property was the Jay F Carlisle Collection at the Parke-Bernet Galleries with a total of $140,405; and at the Welsh sale at the same galleries a Corot landscape sold for $16,000 as the highest single price for a painting. The largest art sale at American-Anderson was the dispersal of the V. Everit Macy Collection for $114,497.

In Paris, in June, a Fragonard sepia drawing, *Le Verrou*, drew Frs 350,000. The sensation in the modern art field was the collection of A. Pra which resulted in a total at auction of Frs. 2½ millions; two Renoirs—the *Children's Heads* and a *Still Life*—brought Frs 512,000 and 465,000 (these had been estimated at Frs 350,000 each).

ASCENSION ISLAND: *see* ST. HELENA AND ASCENSION ISLAND.

ASHANTI: *see* GOLD COAST.

ASHFIELD, ALBERT HENRY STANLEY, 1st Baron Ashfield of Southwell (1874–), British business man, of whom a biographical notice will be found in the *Ency. Brit.*, vol 2, p. 509. Born in Derby and brought up in the United States, where, at 28, he became general superintendent of an important traffic organization, Albert Stanley returned to England in 1907, and within five years was in control of the greater part of London's transport. Knighted in 1914, during the World War Sir Albert entered parliament as president of the Board of Trade, where he effected a complete reorganization; he retired from the government in 1919, was raised to the peerage in Jan. 1920, and in the same year returned to the Underground group of companies as chairman and managing director. In 1931 he was closely connected with the framing of the London Passenger Transport Bill, and on this becoming an Act in 1933 was appointed chairman of the board.

Lord Ashfield went to Canada in 1931 as a member of the Royal Commission to inquire into Canadian transport; he played a leading part in the founding of the Institute of Transport of Great Britain and has been its president, as well as that of many other associations. He is an active member of the Roads Beautifying Association. Lord Ashfield married an American lady in 1904, and has two daughters.

ASSAM, a province of India, consists of two great valleys, the Surma and the Brahmaputra, draining from the north-eastern Himalaya, with the mountain ranges between. It is the home of the Indian tea industry, for which a labour force of nearly a million (including dependants) is imported from other parts of India. In area, rice is the dominating crop. The first complete year of the new constitution was a disturbed one, the ministry having suffered several defeats as a coalition government. In Sept. 1938 it resigned, and a congress ministry replaced it, with Mr. G. N. Bardaloi as premier. Shillong, the capital, is reached by motor road from Ganhati (63 miles), the junction between the Assam–Bengal and Eastern Bengal railways. Attached to the province are the Manipur and Khasi States, the former lying in a beautiful valley (capital Imphal; Maharaja entitled to a salute of eleven guns). The Governor of the province is Sir Robert Reid; he went to Bengal in the summer of 1938, while Lord Brabourne acted as Viceroy. (ME.)

Area and Population (including Manipur):
Area 67,334 sq. miles.
Population (1931) 9,247,857 (Manipur 445,606).
Governor: Sir R. N. Reid, K.C.S.I.
Languages. Bengali (43 per cent), Assamese (21 per cent).
Religions. Hindu (55 per cent), Mohammedan (30 per cent).
Production:

Rice (1937)	5,500,000 acres
Coal (1936)	172,075 tons
Tea (1937)	438,925 acres

Labour :

Number of factories	710
Average daily number of workers employed	47,069

Motor Vehicles Licensed (March 31, 1937): 2,661 cars and taxis, 1,694 commercial vehicles, 90 motor-cycles

ASSASSINATIONS. A list of assassinations, actual or attempted, during 1938 includes :

July 25, Ponce, Puerto Rico. Attempted assassination of Gov. Blanton Winship, who was unhurt The fifteen shots directed at him killed two and wounded more than thirty.

Aug. 25, Jerusalem. British Assistant District Commissioner W. S. Moffatt killed by Arab gunman, whom British troops later shot dead.

Sept. 30, Shanghai Tang Shao-yi, first prime minister of the Chinese republic, assassinated by three assailants in his home.

Oct. 9, Sofia. Maj.-Gen. Yordan Peyev, chief of staff of Bulgarian Army, shot dead by Macedonian terrorist, who killed himself.

Nov 9, Paris. Ernst vom Rath, third secretary of the German Embassy in Paris, died of bullet wounds inflicted Nov. 7 by Herschel Grynszpan, young Polish Jew, in embassy building.

ASTRONOMY. International co-operation has long played an important part in astronomy. Any comprehensive scheme, for example, for charting the sky can be completed in reasonable time only if a number of observatories in both hemispheres participate; a continuous record of, say, solar activity or a nova outburst requires the co-operation of a chain of observatories round the world. Further, to ensure homogeneity of data, co-operating astronomers must agree upon standards of reference and methods of reduction. These ends are now served by the International Astronomical Union, which in 1938 held in Stockholm its sixth triennial general assembly. It adopted important resolutions on such matters, and received reports of progress in various branches of astronomy from the thirty-odd commissions which carry on its work between the assemblies.

Solar System. *The Sun.* Astronomers at Stockholm were enthusiastic about motion pictures of solar prominences made by Lyot (*see* illustration). The McMath-Hulbert films mentioned last year (*Ency. Brit. Book of the Year*, 1938, p. 67, quoted as A), were produced with the aid of a spectroheliograph; Lyot's are *direct* photographs through filters, taken by devices like those he used in photographing the corona (*see* A). The phenomena revealed by both methods are impressive; sometimes a prominence is seen first as a cloud floating some 100,000 km. above the solar limb, then luminous matter pours down from it, seemingly drawn into a centre of attraction on the surface; one of Lyot's films, however, shows such a cloud dispersed by an uprush of further material from the Sun.

Auroras visible over unusually wide areas were symptomatic of the very "active" state of the Sun in the early months of 1938. The great display on the night of Jan. 25–26 was seen over nearly all Europe; great displays were seen in Canada on the nights Jan. 24–25 and 25–26, and in the southern hemisphere about the same time. The magnetic storms associated with these displays, and with one on April 16, were more intense than any recorded (by Greenwich) since 1909.

Such effects belong to a set of solar-terrestrial relationships of which the facts are briefly: a general accordance between the frequency of magnetic storms and the intensity

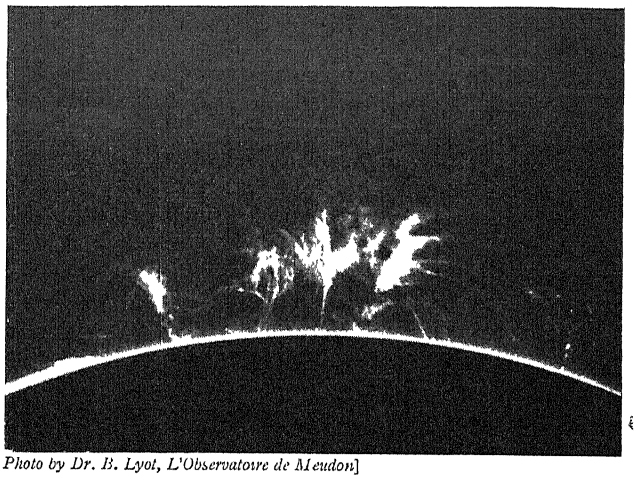


Photo by Dr. B. Lyot, L'Observatoire de Meudon]

SOLAR PROMINENCE OF JUNE 12, 1937. FROM CINEMATOGRAPH FILM MADE BY DR B. LYOT; DIRECT PHOTOGRAPH MADE WITHOUT SOLAR ECLIPSE THROUGH A RED FILTER, EXPOSURE $\frac{1}{10}$ SEC.; SUN MASKED BY METAL DISC

of solar activity, a tendency for auroras and "lesser" magnetic storms to recur at intervals of about 27 days (the solar rotation-period), a tendency for a "great" magnetic storm and an associated aurora to occur between one and two days after the central meridian passage of a large sun-spot. These are well explained (on Störmer's theory of auroras and Chapman's of magnetic storms) on the hypothesis of the radial ejection from disturbed localities on the Sun of streams of charged particles, moving about 1,000 km./sec. which, when near the Earth, move in paths determined by its magnetic field.

This hypothesis receives new support from the discovery by Hess, Steinmaurer, and Demmelmair of a correlation between fluctuations of the Earth's field and the ionization produced by cosmic rays, the effect being very pronounced Jan. 16–28. This can be explained by noting that the particle stream which on Chapman's theory modifies the field at the Earth's surface must modify it also at considerable distances, and so deflect the cosmic-ray particles from their normal paths. Again, the average lower limit of auroras is near the E-layer of the ionosphere; the entry into this layer of high-speed particles producing auroras must increase its ionization, and will presumably affect radio transmission. This effect has now been detected. It differs from radio fade-outs, associated with bright solar eruptions (*see* A), and ascribed to ultra-violet radiation. But it is extremely interesting that Higgs and Giovanelli in Australia observed a prolonged solar eruption, associated with radio fade-outs, some 35 to 39 hours before the aurora of Jan. 25 They suggest that the particles causing the aurora came from the same solar disturbance; there was in this instance no great spot on the disc.

Planetary System. On Oct. 30, 1937, the minor planet Hermes approached to within a distance of 485,000 miles from the Earth, which is closer than any astronomical object (except the Moon) has ever been known to come. It was discovered and named by Reinmuth at Heidelberg, and subsequently identified on plates taken at other observatories. The whole series, however, covers less than five days, the difficulty of observation being due to its rapid motion across the sky, which at the time of discovery was of about 100 times the usual order for such objects. Hermes is probably less than a mile in diameter. The observation of such a small rapidly moving object is largely a matter of chance, and it may never be seen again.

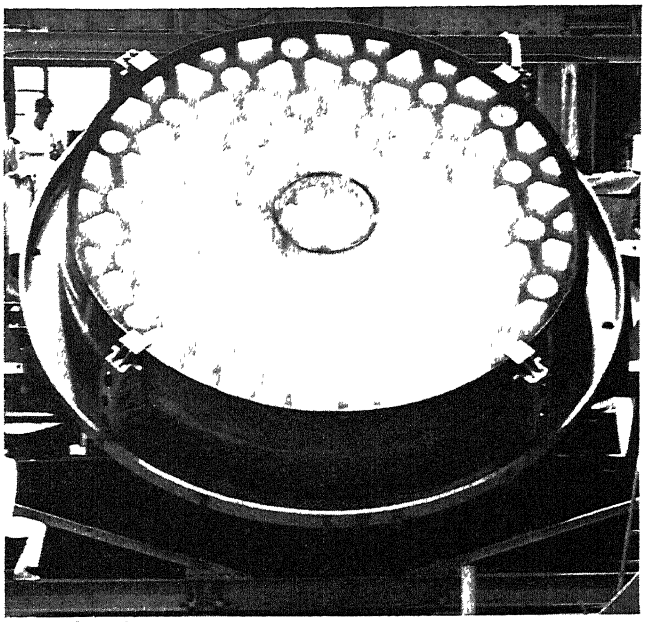
Two new satellites of Jupiter (JX and JXI) have been discovered by Nicholson at Mt. Wilson Both are extremely faint. JX was observed July 6–Aug. 25, when it was about 7,000,000 miles from Jupiter, but very diverse orbits have been inferred from the positions, JXI was observed July 30–Aug. 25 and was at least 10,000,000 miles from Jupiter.

Spencer Jones has analysed the Greenwich latitude variation observations for 25 years (1911–36), for the determination of the constant of nutation, an important constant in fundamental astronomy. It measures the "nodding" of the celestial pole towards and from the pole of the ecliptic caused by the motion of the Moon's nodes. His value $9''{\cdot}217 \pm 0''{\cdot}004$ yields 81·53 for the ratio of the Earth's mass to the Moon's (or 81·59 allowing for galactic rotation)

The problem of the origin of the solar system attracts renewed interest. In order to explain its large angular momentum Lyttleton and Russell independently proposed recently the hypothesis that the Sun was initially a binary star, and that another star collided with the Sun's companion, knocking it out of its orbit and leaving behind merely "débris" of the collision as material for planet formation Lyttleton now further suggests that this material first formed a few large planets, rotating rapidly in virtue of the shearing action of the collision. As each of these planets cooled and contracted, its rotation would produce fission into two main masses, with again some débris not absorbed into either. The main components are identified as present major planets, while the débris is supposed to have formed their satellites as well as the "terrestrial" planets, and probably the Moon. It is a complicated story; but it seems impossible otherwise to account for the existence of bodies of as low masses as the planets (had they been formed directly out of stellar material they would have "evaporated" instead of condensing) and for known disparities in their densities.

Stars. *Special Stars and Stellar Structure.* The past year has seen the discovery of the largest known diameter of a star, the principal component (I) of ϵ Aurigæ is found to have a diameter about 3,000 times that of the Sun. Surprisingly, component I cannot be seen directly, for it is an infra-red star, but its characteristics are revealed when it eclipses its companion (type F2).

There has also been a new claimant for the title of "nearest star". It was the twelfth magnitude star Wolf 424, and its claim was deduced from a spectrum of this faint object, which Yerkes observers succeeded in obtaining. However, a subsequently announced trigonometric parallax has disposed of this claim, but not of the interest of the spectrum. For Wolf 424 is an M-dwarf, and what is important is that it belongs to a class of star which may be the commonest of all. Such stars can be seen only if they are relatively close; Luyten finds that amongst the 54 known stars nearer than five parsecs, the maximum abundance occurs at absolute photographic magnitude about + 15, while various recent studies by van Maanen put it about + 12. Thus the most abundant stars are probably 1,000 to 10,000 times fainter (intrinsically) than the Sun. Complementary results on the frequency of spectral types emerge from the now nearly complete Spectral Durchmusterung of faint stars in the Kapteyn selected areas. Amongst bright stars early types are relatively abundant, but amongst these fainter stars later types, especially G, preponderate. However, this Durchmusterung does not include the very faint stars just discussed.



Associated Press]
THE 200-IN. DISC FOR MT. PALOMAR OBSERVATORY TELESCOPE NEARING COMPLETION AT PASADENA, CALIFORNIA

About ten years ago Russell, Adams, and Moore calibrated the multiplet intensities in the solar spectrum, and there followed Russell's extensive analysis of the composition of the solar atmosphere. Hacker's study in 1938 of the Arcturus spectrum represents the first extension of such work to another star. He finds Arcturus's atmosphere to have effective photospheric temperature $3925° \pm 75°$ K. and mean electron pressure $3{\cdot}9 \times 10^{-8}$ atmosphere.

The spherical form of a star is distorted by rotation and by tidal action of a companion. The degree of distortion depends in a known way upon the degree of concentration of density towards the centre. Therefore, measurements of the distortion can be used to test theories of internal stellar constitution. The distortion is in principle deducible from the apsidal motion of a double star, but the method is difficult of application. It can, however, be got successfully from light-curves of eclipsing binaries. For example, μ^1 Scorpii in 1938 has been found to have components, one with major axis 6.22 and minor axis 5·51 solar diameters, the other with 5·60 and 4·95. This is novel, because generally only the mean ellipticity of the components can be inferred. Studies of thirty or forty such cases lead Luyten to deduce for the stars concerned a central condensation about the same as for the planet Saturn, and Kopal to conclude that main sequence stars are more nearly homogeneous than theories of their constitution had predicted.

Stellar System. A few examples of newly published additions to systematic astronomy are 28 new parallaxes determined at Greenwich and 85 at the Cape of Good Hope (including new values for Sirius, Canopus, and Antares) and a list of 800 new southern double stars by Rossiter. It may be mentioned that from 1926 to 1937 parallaxes of 836 stars, involving the measurement of 3,476 plates, were published by the Cape Observatory. Jackson gives also (1938) an analysis of the distribution of 41,000 stars in the Cape Astrographic Zone with respect to photographic magnitude, spectral type, and proper motion, with estimates of the proportion of dwarfs and giants and of space densities of various classes of stars.

Oort publishes new conclusions about the structure of the Galaxy. It was stated in A that our galaxy probably resembles the spiral nebula there illustrated Oort claims to have derived fresh data concerning the location of spiral arms, which also show the Sun to be in one of the emptier regions between the convolutions Much work is required to establish and extend such results; coupled with results on motions in the galaxy, they should lead to far-reaching conclusions about its evolution.

Hitherto only two types of large-scale stellar aggregates have been recognized, globular clusters and extragalactic nebulæ. But now Shapley has found another. The examples found are one in Sculptor and one in Fornax, and Shapley considers that they probably belong to our own "super-galaxy", and that the super-galaxy in Virgo probably contains similar systems. Such a system is distinguished from a globular cluster by its low surface brightness, which has probably prevented their discovery in greater numbers, and from extragalactic nebulæ by the apparent absence of Cepheids, supergiants, irregular nebulæ, and sub-clusters. However, they are being searched for Cepheids in order to determine distances.

Extragalactic Nebulæ. It was said in A that, to a first approximation, the galaxies show a statistically uniform distribution throughout the space accessible to existing telescopes. Two new surveys by Shapley, one involving about 76,000 and the other 97,000 galaxies in the southern galactic hemisphere, confirm his previous contention from comparison of the two galactic hemispheres that, on the contrary, there are remarkable *anisotropies* in the distribution to a depth of about 10^8 light years. He considers that these vitiate attempts that have been made to show contradictions between the conception of the "expanding universe" and the evidence of nebular counts, since by assuming isotopy they were evidently based on too bold extrapolations from limited regions of the sky.

Telescopes and Instruments. Four great telescopes in course of construction are described in *Ency. Brit. Book of the Year*, 1938, p. 632. As regards these, satisfactory progress is reported in the work at Pasadena of figuring the 200-in. disk for the Mt. Palomar Observatory. Also a third attempt in America to cast a pyrex disk for the 74-in. reflector of the new Radcliffe Observatory at Pretoria has proved successful; it is being figured in England. The erection at Pretoria of the turret, and the telescopic mounting illustrated in 1938, is now nearly complete. The 24-in. photographic refracting telescope from the old Radcliffe Observatory at Oxford has now been re-erected at the London University Observatory.

Important advances in time-keeping are likely to result from the use of quartz clocks, whose working depends upon the piezo-electric vibrations of quartz crystals in alternating electric fields. These clocks equal the performance of the best pendulum clocks over long periods, and are better over periods up to some months. They can be compared more accurately, and proximity is not essential for this; standards throughout the world can be compared with an accuracy of 0·001 sec. per day.

A noteworthy advance in astrophysical spectroscopy is the adoption of diffraction gratings ruled by a new technique developed by R. W. Wood. The ruling is on aluminized pyrex glass, and can be made to concentrate a large percentage of the incident light into the spectrum of any desired order; the concentration of 85 per cent in the first order spectrum is possible Such gratings are in use at Mt Wilson in the spectrograph of the 100-in. telescope, and at Harvard Observatory (W. H. McC)

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ATATURK, KAMÂL (1881–1938), first president of the Turkish Republic, was born in humble circumstances in Salonica, and, in 1904, by way of the military preparatory school, entered the army as lieutenant An account of his career and astonishing rise to pre-eminence will be found in the *Ency Brit.*, vol 16, pp. 31–32



Associated Press]
KAMÂL ATATURK

During his last ten years the president, who was re-elected in 1931 and 1935, retained his dictatorial powers and his fierce anti-clerical and anti-Moslem prejudices, and continued the secularization and modernization of his country, holding that Turkey could not compete with the modern world unless she were modern also. Towards this end he took an active part in the change-over from the Arabic to the Latin script, himself (1931) teaching the new alphabet all over the country; and it was as part of the same campaign that, on ordering all Turks to adopt surnames (1934), he took that of Ataturk ("Father of the Turks"), dropped the Arabic "Mustafa", and respelled "Kemal" "Kamâl". His public acts belong to the history of Turkey (*q v.*); the facts of his private life are known to few. At times a hard drinker, an inveterate card-player, and always an indefatigable worker, he is said to have cared for only one woman—his mother, for one man—his successor, President Ismet Inonü (*q.v.*), and for one thing—the good of his people. He married Latifé Hanum, daughter of a wealthy Moslem shipowner of Izmir (Smyrna), in 1923, but divorced her (having had no children) in 1927, fearing that she might attempt to influence policy. The profits accruing from his great development of the State's resources he put back into the development of the State; and when he died of cirrhosis of the liver, on Nov. 10, 1938, the government felt able to announce that "Turkish youth will march along the path Atatürk traced; Kamâl Atatürk will live for ever". He was given the greatest public funeral that Turkey had ever known on Nov. 21, at Ankara, Field-Marshal Lord Birdwood, his former opponent at Gallipoli, representing H M. King George VI. (L. H. D.)

ATHLETICS. Outstanding features of 1938 were the British Empire Games at Sydney, Australia, in March, and the European Championships at Paris in September. The Empire Games were remarkable for an improved standard of performance, one world's, three Empire, and ten Games records being broken. The best performances were: T. P. Lavery (South Africa), 120 yds. hurdles, 14 sec.; C. B. Holmes (England), 100 yds., 9·7 sec., and 220 yds., 21·2 sec.; C. H. Mathews (New Zealand), 3 miles, 13 min. 59·6 sec., and 6 miles, 30 min. 14·5 sec.; T. Loaring (Canada), 440 yds. hurdles, 52·9 sec. None the less, the Empire Games had an adverse effect upon the part played subsequently at European meetings by British athletes,

who suffered from the long voyage and indifferent conditions obtaining in Sydney

The only member of the team to retain his title at the English Indoor Championships was F. R Webster, R A., who won the pole vault for the fourth successive year and later made a new English record of 12 ft. 9½ in New records were set up at the Indoor Championships by D O Finlay, R A F., 70 yds hurdles, 8·9 sec.; and R. Thorogood, 2 miles, 9 min. 33·6 sec.

The British Games on Whit-Monday again catered for the inter-county championships, in which Surrey finished ahead of Middlesex, Lancashire, and Hertfordshire. New records were made by W E N. Breach, long jump, 23 ft. 4½ in , C. B Holmes, 100 yds., 10 sec.; D. O. Finlay, 120 yds hurdles, 14 9 sec.; and a new English record by J Higginson, hop, step, and jump, 47 ft. 4 in.

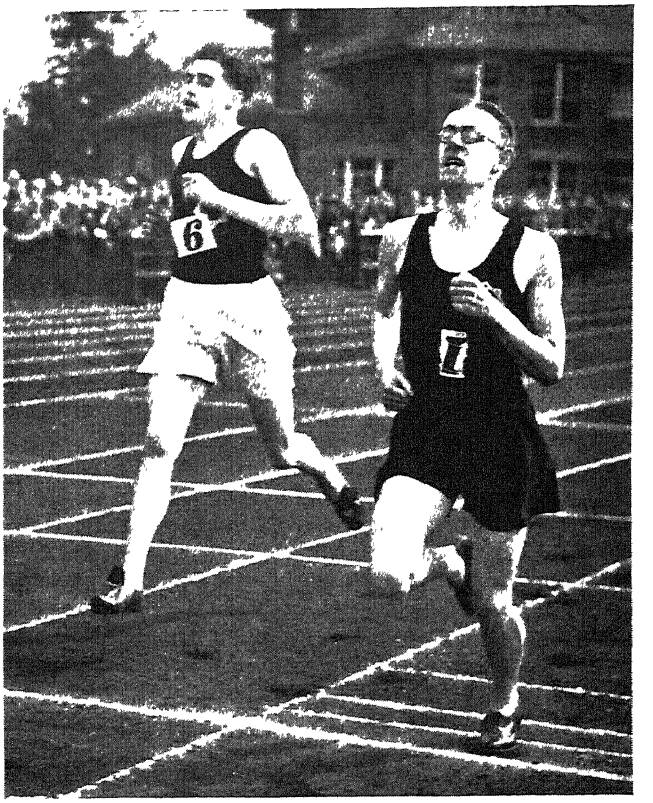
A new scoring system was adopted for the Oxford and Cambridge Sports, in which points were awarded for the first three places. This resulted in a win for Oxford by 60 points to 57 points. The match, in which the Universities of Oxford and Cambridge met Princeton and Cornell, brought an unpleasant surprise for the British, who lost to the Americans by 9 events to 3. There were no outstanding performances.

National Championships in Great Britain produced satisfactory results with an outstanding field events performance by D. Young, who won the Scottish discus title at 153 ft. 10 in. The 69th A.A.A. Championships produced records from D. O. Finlay, who, in winning his seventh consecutive hurdles title, returned 14·4 sec., and Maffei (Italy), long jump, 24 ft. 8 in. Of the 21 events, six went to Italy, two to Holland, two to Eire, and one each to Northern Ireland, Belgium, and South Africa. The Italian team were successful in the six miles, pole vault, shot, discus, long jump, and sprint relay.

Perhaps the main reason for the brilliant progress of Germany was to be found in the number of International matches in which German teams took part and triumphed. Germany defeated Poland, 105–73; France 105–46; Switzerland, 108–50; Holland, 57–40; and also Denmark. Britain, however, had her triumphs, defeating Norway, 72–67, and France, 70–50. The All-British Triangular International was revived, with England (84½ points) beating Ireland (44½) and Scotland (22). The match was unsatisfactory through the exclusion of a number of field events. No less than eighteen nations competed at the British International Festival on August Bank Holiday, when new British records were made by S. C. Wooderson, 880 yds., 1 min. 50·9 sec.; A. G. K. Brown, 440 yds., 47·6 sec.; J. Patterson (U.S.A.), 440 yds. hurdles, 53 sec.; and A. Varszegi (Hungary), javelin, 237 ft. 2¾ in.

Germany scored a major triumph in the European Championships, which provided a fitting climax to a great season. It is only fair to say, however, that Great Britain, but for the trip to Australia, must have succeeded. As it was, a skeleton British team scored points in all but three of the fifteen events in which Great Britain was represented. The all-round ability of Germany, an unaccountable falling off in the running of the Finns, and the deplorable weakness of Great Britain in the field events is revealed by the scoring: Germany, track 54, field 49; Finland, track 37, field 41; Great Britain, track 52, field 1½.

The institution of the School of Athletics at Loughborough College, England, is, however, rapidly remedying British field events weakness and eliminating the need to rely upon foreign coaches.



Keystone]

S. C. WOODERSON (RIGHT) SETTING UP A NEW WORLD'S RECORD FOR THE HALF-MILE AT MOTSPUR PARK, AUG. 20, 1938

Other matters of moment during the year have been the opening of the White House of Finnish Sport at Vierumäki, Finland, much on the lines of the English School, and the necessary improvement of the stadium at Helsingfors in which the next Olympic Games will be held in 1940.

Outstanding performances during the European year have been achieved with world's records by S. C. Wooderson, 880 yds., in 1 min. 49·2 sec., and 1 mile in 4 min. 6·4 sec.; Y. Nikkanen, javelin, 258 ft. 2½ in.; the Germans, Hein (191 ft. 4½ in.) and Blask (193 ft. 6·8 in.) in the hammer; and 10,000 metres, Maki (Finland), 30 min. 2 sec. The following performances by British athletes, other than Wooderson and Finlay, deserve mention: Brown, 440 yds. in 47·6 sec.; Webster, pole vault of 12 ft. 9½ in.; Higginson, hop, step, and jump of 47 ft. 4 in.; Emery, 2 miles in 9 min. 7·6 sec.; Young, discus throw of 153 ft. 10 in.; and Blakeway, javelin, 202 ft. 4 in.

Germany, however, overshadowed Europe. In addition to her two world's record-breaking hammer throwers, Suter cleared 13 ft. 3 in. for his European pole-vault title; Harbig ran 400 metres in 47 sec. and 800 metres in 1 min. 50·6 sec.; Wegener did the 110 metres hurdles in 14·5 sec.; Leichum a long jump of 25 ft. 1¼ in.; Woellke a shot put of 54 ft. 2½ in.; while Sievert was the best Decathlon man in Europe, with 7,467 points.

Walking activities did not attract quite as much attention in Europe during 1938 as previously owing to the doubt existing as to what new rule, if any, should be adopted to define fair walking and what should constitute the walking events at the next Olympic Games. After a conference in Italy the matter of the definition remained *in status quo*, but the Olympic position was decided. For some time it was the custom to hold 3,000 and 10,000 metres track walking races, but in 1932 and 1936 Olympic walking was confined to a 50-km. road walking championship, won on

both occasions by British walkers. In future, one of the short track walks is to be restored to the programme, a matter of great satisfaction to Italy, who, through Friggerio, have figured successfully in this event. None the less, during 1938 pride of place at the official Olympic walking distance of 50 km went to France, with Cambrai returning 4 hr. 35 min 25 sec , and Bussière 4 hr 36 min 35 sec. After the Frenchmen in the rankings came Zofka, Czechoslovakia, and Sergerstrom, Sweden, and then Whitlock, Great Britain, the Olympic Champion (4 hr. 41 min. 51 sec.).

In another road event, the marathon race, the world ranking list is headed by Coleman, South Africa, who in returning 2 hr 30 min. 49 sec. for the run of 26 miles 385 yds., was nearly 5 minutes ahead of the next best time returned by Pawsan, U.S A , who was himself some 4 seconds faster than Ragazos, Greece.

An event not universally contested, and earlier an almost exclusively British preserve, is the 3,000 metres steeplechase. No British athlete is included in either the world's or European rankings for 1938. Major honours are shared by Scandinavians and Germans, with Linblad, Sweden, returning 9 min 9·2 sec. and his fellow countryman Larsson 9 min. 10·8 sec. This is a complete change of leadership since British supremacy passed in the first place to Finland and has now gone to Sweden. (F. A. M. W.)

United States. Fifty-seven records were broken by American athletes in 1938. Sixty-five American athletes were invited to compete in European countries during the summer of 1938, and they won the dual meet with Germany in the Berlin stadium and created new foreign records in London, Paris, and elsewhere.

Most significant of all the new figures for the year is the 4 min. 4·4 sec. mile run by Glenn Cunningham, the greatest mile that man has ever run. The new record, made on the fast indoor track at Dartmouth College, Hanover, N.H., on March 3, will not gain acceptance by the International Amateur Athletic Federation (even though it does pass into the A.A.U. American list), because the federation does not recognize indoor records.

The only American track record that will be advanced by the I.A.A.F. will be the 440-yd. relay of 40·5 sec. made by the University of Southern California quartet in May 1938, which may replace the world record of 40·8 sec. made by another team of the same institution in 1931. Ben Johnson, sprinter of Columbia University, broke eight track records during 1938.

A total of 77 amendments to the constitution, by-laws, and rules of the A.A.U. was presented to the delegates during the fiftieth anniversary convention of that organization, at Washington, D.C., Dec. 2–4. For the fourth consecutive year, opponents of the metric system for measuring distances of track events attempted to return to yards and miles. Metres are used only in the national indoor and outdoor championships for track events, not in field events.

Other changes of the A.A.U. affecting track and field are those permitting the use of starting blocks and establishing minimum distances for runways of field events, for which the I.A.A.F. gave its approval in February. Blocks have been used in A.A.U. competitions for the past year.

At the outdoor national A.A.U. championships, held in Buffalo Civic stadium, Buffalo, N.Y., July 2–3, the track was very heavy, and the only record set up was by Hank Cieman, of the Achilles Club of Toronto, in the 3,000-metre walk, 13 min. 39·9 sec. The championship team title was won by the New York Athletic Club with 57 points.

In the outdoor intercollegiates, at Randall's Island, N.Y , on June 4, the track and field team of the University of Southern California captured the team title for the eighth time, with 47½ points, double those of Michigan State College, 24 points Even though the meet was held during a heavy rain, three new records were established : Howard Borck, Manhattan, 1 mile, 4 min. 13·9 sec. ; Joe Mochair, Manhattan, 2 miles, 9 min 21·2 sec. ; Dolos Thurbar, of U S A , high jump, 6 ft. 6⅝ in.

ATHLETICS, WOMEN IN. The main features of the women's athletic year, 1938, were the British Empire Games at Sydney in March, and the European Championships at Vienna in September

At the British Empire Games D Norman, Australia, performed a remarkable feat in winning the 100 yds. in 11·1 sec (Empire record), 220 yds in 24·7 sec. (Games record), long jump with 19 ft. 0¼ in. (Games record), as well as representing Australia's winning team in the 440 yds. relay, run in 49·1 sec. (Games record). Records for the Games were broken also by B. Burke, England (80 metres hurdles, 11·7 sec.), D. Odam, England (high jump, 5 ft. 3 in.), and R. Higgins, Canada (javelin, 125 ft. 7¼ in.).

The principal scores in the European Championships were Germany 96 points, Poland 29, Holland 18, England 15, Italy 11, and Hungary 8. In the high jump Dora Ratjen, Germany, achieved a wonderful world's record of 5 ft. 7 in., beating F. Csak, Hungary, the Olympic Champion, who tied with two other girls at 5 ft. 4·6 in. for second place. The famous Polish girl, Stella Walasiewicz, won the 100 metres in 11·9 sec. and the 200 metres in 23·8 sec., defeating K. Krauz, Germany, in both races ; and was second, at 19 ft. 0·7 in., in the long jump to I. Praez, Germany, who jumped 19 ft. 3·4 in.

The English Women's Open Championships were noteworthy for B. Reid breaking two British records, *i.e.* shot, 38 ft. 0½ in., and discus, 116 ft. 2 in. ; while B. Locke equalled the British record of 7·6 sec. for 60 metres, and also won the 100 metres in 12·2 sec. (F. A. M. W.)

In America the women's outdoor track and field championships of the A.A.U., held in New Haven, Conn., on Aug. 7, saw six new champions appear among the eleven events on the programme. The Tuskegee Institute, of Alabama, successfully defended its team title, winning thirty points to thirteen points, for the German-American A.C., N.Y. Miss Lulu Hymes, of Tuskegee, won the 100 metres and the running broad jump, and competed in the winning 400-metres relay team. She was awarded the special trophy for the most outstanding performer of the meet.

ATHOLSTAN, HUGH GRAHAM, 1st Baron, Canadian journalist, was born at Huntingdon, Quebec, on July 18, 1848, and died in Montreal on Jan. 28, 1938. Having joined a Montreal newspaper office as a boy, Graham started the *Montreal Star* in 1869 in company with George T. Lanigan ; but the two soon disagreed on a matter of politics, and Graham carried on alone in face of fantastic difficulties over which he finally triumphed. He, more than anyone else, was responsible for the raising of the Canadian contingent which served in the South African War. The whole of his journalistic and other activities was informed with a solid imperialism. He was knighted in 1908, and in 1917 a barony of the United Kingdom was conferred upon him.

ATMOSPHERE, THE. Under this heading are considered some of the most interesting results obtained from recent investigations of the atmosphere.

Composition of the Atmosphere. Owing to the discrepancies of text-book and other published figures on the

composition of the atmosphere, it may be advisable to give here in per cent by volume those which to-day seem the most reliable

Nitrogen	78·09	100 per cent
Oxygen	20·95	
Argon	0·93	
Carbon dioxide	0·03	
Neon	1·8	10^{-3}
Helium	5 3	10^{-4}
Krypton	1	10^{-4}
Hydrogen	5	10^{-5}
Xenon	8	10^{-6}
* Ozone	1	10^{-6}
† Radon	6	10^{-18}

* Variable, increasing with height
† Variable, decreasing with height

It is probable that the figures of the table (with the exception, of course, of the last two) represent the percentage composition of atmospheric air, not only near the ground, but in the whole troposphere and the lower layers of the stratosphere From the chemical analyses carried out on air samples collected in the stratosphere (*see* the underlined flights in the diagram) it appears that at a height of between 20 and 28 km the mixing of the atmosphere by winds is incomplete, so that, under the influence of the earth's gravitational field, the proportion of the lighter gases (like helium) increases at the expense of the heavier ones (like oxygen); but the variations found are very small (amounting only to a few per cent of the figures given in the table for the respective gases), and it is unlikely that this process of gravitational separation goes on proportionally to further increase in height For the spectroscopic evidence provided by the light of the aurora still proves the presence of oxygen and nitrogen even at heights of 1,000 km, where so far no helium has been observed. This unexpected fact may be due to increase of temperature in the higher stratosphere, which leads to a mixing of the atmospheric gases and, possibly, to an escape of helium into the void.

The absolute quantity of the gases in the upper stratospheric layers is so small (*see* the curve in the diagram representing the diminution of pressure according to height) that, even if some changes in their relative proportion occur there, the figures given in the table would, nevertheless, correctly state the percentage composition of the total atmosphere—ozone and radon always excepted (*see* below).

In addition to the gases mentioned in the table, air near the ground always contains water vapour, the quantity of which may amount to four per cent of the total air. The figures in the table refer to dried air. The water vapour and Radon content diminishes rapidly with height.

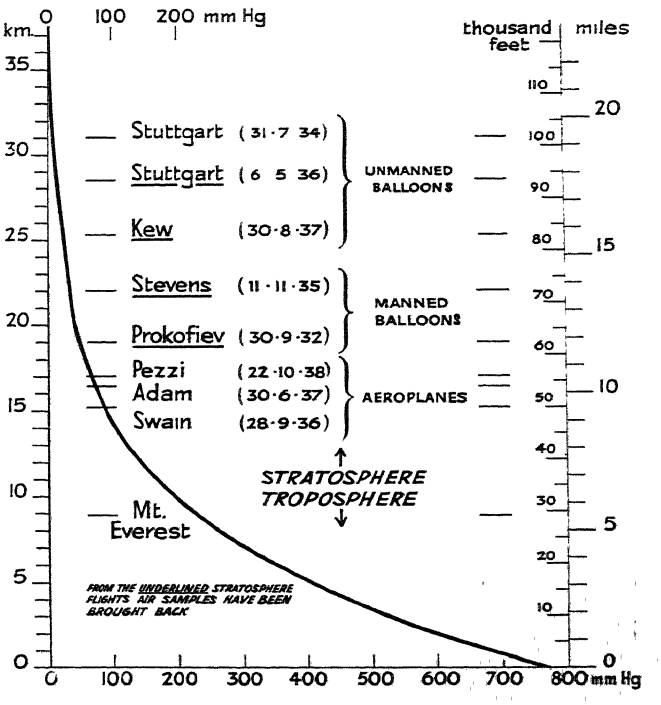
Of special interest is the distribution of ozone in the atmosphere. Spectroscopic observations—carried out from the ground, during the flight of "Explorer II" (*see* below), and with automatically recording spectroscopes sent up in unmanned balloons—have shown that most of the ozone content of the atmosphere is situated between the heights of twenty and thirty km., where it is constantly formed afresh by rays from the sun; vertical air currents carry it down to the ground, where its local concentration varies considerably, since it is easily decomposed by contact with oxydizable substances. It would seem that its quantity per c.c. sometimes shows a minimum between the heights of four and ten km. There are important relations between the ozone content of the atmosphere and weather condition, which are being studied by a number of stations distributed all over the globe

Physical Conditions of the Atmosphere. Recent research work on temperature, pressure, and the electric state of the upper atmosphere confirms in general the views previously held, while at the same time adding details to our knowledge Especially the systematic investigation of radio wave reflexion has brought to light many new facts about the ionized layers at various heights of the stratosphere Space forbids a discussion here of the connexion revealed between height and intensity of these ionizations and the position and physical state (hydrogen prominences, sunspot activity, etc.) of the sun. It may be mentioned, however, that such studies have already found practical application: it has, *e g*, been observed that, by influencing the ionized layers of the atmosphere magnetic storms are detrimental to radio transmission, and since these storms tend to recur at 27-day intervals (corresponding to the period of rotation of the sun), transatlantic broadcasts are, if possible, arranged for intermediate dates.

Attempts to reach Great Heights. A new height record for aeroplanes was established in 1938 when, on Oct 22, an Italian, Lieut.-Col Mario Pezzi, attained a height of 17,074 metres, using a Caproni machine with a sealed cabin. The previous record was set up by the late Squadron-Leader M. J. Adam (British Air Force) in June 1937, who reached an altitude of 16,400 metres, wearing a pressure suit, in an open cabin

An unsuccessful attempt was made to beat the record for manned balloons established by Major A. W. Stevens (U S A), who attained in 1935 the altitude of 22·100 km. with the helium-filled balloon "Explorer II". Two officers of the Polish army hoped to arrive at greater heights by using hydrogen instead of helium as the filling gas for a

at	250 km	REGION F *(Appleton-Layer)*
from	100 km upwards	AURORAE *(Northern Lights)*
at	100 km	REGION E *(Kennelley-Heaviside layer)*
at	80 km	NIGHT LUMINOUS CLOUDS
from	20 to 170 km	METEORS



balloon of similar dimensions, but when, on Oct 14, the balloon was inflated at Zakopane (Poland), the hydrogen caught fire—probably in consequence of an electric spark—and the balloon was destroyed

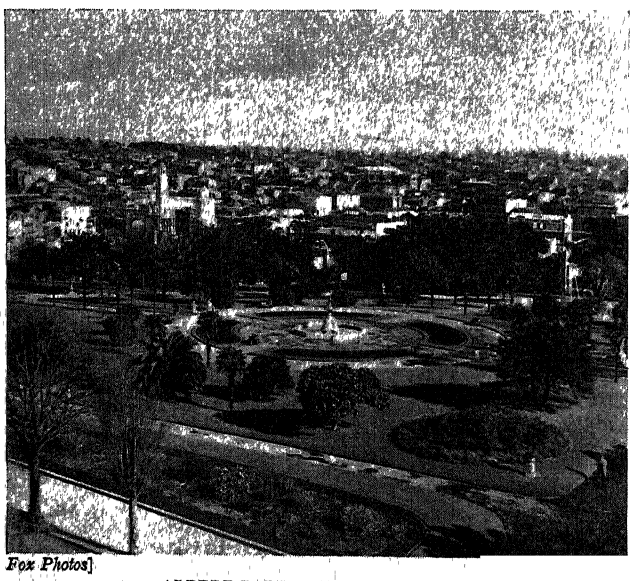
For scientific investigations of the upper atmosphere, more valuable than either aeroplanes or manned balloons are unmanned balloons with automatic instruments The pilots of high-flying aeroplanes, uncomfortably enclosed in pressure suits or sealed cabins, cannot in addition adequately attend to scientific apparatus, while the stratosphere ascents of manned balloons are too expensive for sufficient flights to be carried out to collect the great number of data essential for any research on the ever-changing atmospheric conditions Further, unmanned balloons can reach altitudes of more than 31 km as compared with the record heights of 17 and 22 km of aeroplanes and manned balloons respectively (*see* diagram). Since automatic instruments can be devised for most scientific researches on the upper atmosphere, unmanned balloons are the main vehicle; only for a few special investigations do manned balloons or, for smaller heights, aeroplanes, offer definite advantages.

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ATOM, THE: *see* MATTER, STRUCTURE OF

AUCKLAND. The loss of the "Samoan Clipper" on the first commercial flight from Honolulu to Auckland indefinitely delayed the opening of the air service between the United States and New Zealand, which promised to make Auckland, as terminal of two great international air routes, one of the most important air ports of the world. A Musick Memorial trophy, named after the commander of the lost flying boat, was instituted by Auckland subscribers it was to be awarded annually for the most valuable contribution to the safety of life in the air and the efficient working of aircraft, with special regard to trans-oceanic flying.

In the course of 1938 a big programme of port development was announced, as part of a ten-year plan, costing in all a million pounds.



Fox Photos]

ALBERT PARK, AUCKLAND, N.Z.

In the municipal elections in July 1938, a Labour majority of fifteen to six was changed to a minority of eight to eleven In the national general election, however, the Auckland metropolitan and suburban electorates remained strongly Labour in allegiance, the National party being able only to retain its one seat among eleven

(H V H)

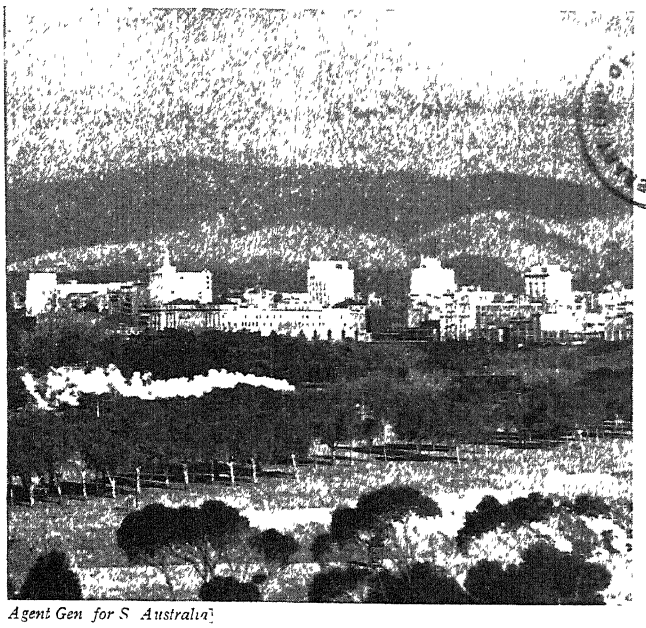
AUSTRALIA, COMMONWEALTH OF. It was announced on Oct 25 that the Duke of Kent would succeed Lord Gowrie as Governor-General in Nov 1939 Mr Lyons's Ministry was reconstructed in Nov 1938 Senator MacLaghlan resigned the postmaster-generalship, and was replaced by Mr A G. Cameron Brigadier G A Street became minister of defence in place of Mr Thorby, who took the portfolio of civil aviation and works. Colonel White, minister of trade and customs, also resigned, giving way to Mr J A. Perkins The prime minister formed at the same time an "inner cabinet", consisting of himself, Sir Earle Page, Mr. Menzies, Mr Hughes, Mr. Casey, Mr. Thorby, and Brigadier Street

Defence and Foreign Affairs. Armament expenditure was greatly expanded in the course of 1938. In April the government announced that it had adopted a rearmament plan to cost £43 millions in the next three years, including nearly £25 millions of additional new expenditure. The programme included the purchase of two 7,000-ton cruisers, the provision of additional anti-aircraft and fixed land defences, the establishment of a mobile garrison at Port Darwin, the addition of nine more squadrons to the air force, and the extension of munitions production within the Dominion Developments in the making of producer gas, the extraction of oil from shale, and the use of Australian woods for newsprint were also furthered with an eye to strategic needs. A strong agitation sprang up for the reintroduction of compulsory military service, a notable supporter being the Labour premier of Tasmania. Mr. Lyons, the prime minister, replied to the agitation by declaring that what was needed was concentration on the material side of defence rather than on man-power. After the international crisis of September the defence programme was again enlarged and accelerated. It was announced in December that the estimated cost over three years had been raised to £63 millions.

In a statement on Sept. 14, the prime minister declared that he had advised the United Kingdom government that Australia was in the most complete accord with its policy towards Czechoslovakia as outlined by Mr. Chamberlain and reaffirmed by Sir John Simon in his speech at Lanark. It was understood that Australian influence was brought to bear in favour of a policy of exploring every possible means of peaceful adjustment before using threats of war.

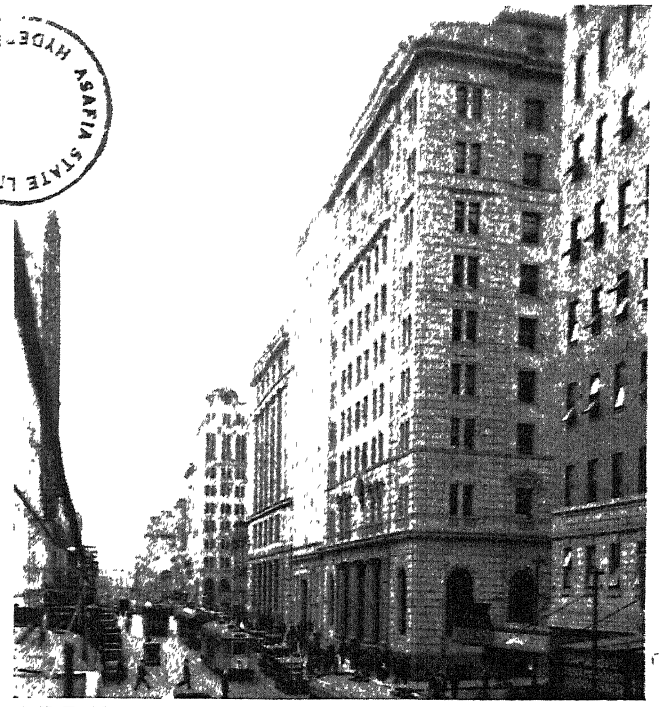
Concern continued to be felt about the course of events in the Far East. For some weeks wharf labourers in Sydney, and to a less extent in other ports, refused to handle scrap metal and certain other cargoes consigned to Japan. The government, declaring that only they could be responsible for the conduct of foreign policy, threatened to introduce the licensing system among the waterfront workers, who thereupon resumed loading the cargoes. An action by the Australian government which had international repercussions was an embargo suddenly placed on the export of iron ore. The reason given was their fear, based on an official report, that the reserves of ore would prove inadequate in the future to supply Australia's own needs, which now totalled two million tons a year and were rising rapidly.

Public Finance. The fiscal year ended June 1938 pro-



Agent Gen for S Australia

ADELAIDE, SOUTH AUSTRALIA, FROM NORTH ADELAIDE



A. N. T. A.

QUEEN STREET, BRISBANE

duced a budget surplus of £3,495,000, revenue showing an increase of £6,650,000 on 1936–37, and expenditure an increase of £4,428,000. The combined budget surplus of all Australian governments was £13,805,000, including sinking funds.

In May 1938 the government introduced a Social Insurance Bill, under which 1,850,000 workers, with about the same number of dependents, would be compulsorily insured against sickness and disablement The benefit for the sick or disabled would be at the rate of £1 per week, *plus* allowances for dependent children. The Bill also provided for an old-age pension of £1 per week. Male employees would pay in premiums 78*s*. per annum, employers the same for each employee, and the government £1. The cost to the government was estimated at £2 millions per annum for five years, increasing at the rate of £500,000 per annum thereafter. Meanwhile, the existing bill of £16 millions a year for non-contributory pensions would gradually fall. Professor Copland, leading Australian economist, pointed out that, whereas the number of people of pensionable age was then 26 per 100 wage-earners, in forty years' time it would have risen to 54 per 100, and that the burden might then become oppressive. The capitation fee of 11*s*. per annum fixed in the Bill for panel doctors was strongly criticized by the medical profession, and the government appointed a commission to review this part of the measure. A new section of the Treasury was formed, and Professor J. B. Brigden appointed director of national insurance.

The measure to set up an Inter-State Commission, which among its other duties would take over the functions of the Commonwealth Grants Commission, was dropped by the government in view of the opposition of the States and the urgency of pressing forward with defence finance.

At the Loan Council meeting in April 1938, total borrowing requirements were scaled down to £19,550,000. Borrowing by semi-governmental authorities, however, was on the increase. It was agreed to float immediately an internal loan of £10,250,000, including £4 millions for defence. This loan was over-subscribed. In May 1938 the Commonwealth government also borrowed £7 millions in London, of which £5 millions were wanted to fund treasury bills and the remainder for defence. The Premiers' Conference held in Oct sanctioned the issue of a new internal loan of £4 millions for defence. The state governments, however, refused to accept the federal prime minister's plan for unification of control over defence works. Mr. Lyons proposed that the States should concentrate upon those public works which were most needed in the interests of national defence, and that an advisory committee representative of both Commonwealth and States should indicate the order of priority in which the works in question should be undertaken. On this issue the Conference broke up The December increase in the defence programme was associated with a proposal to raise a further loan of £10 millions for defence purposes

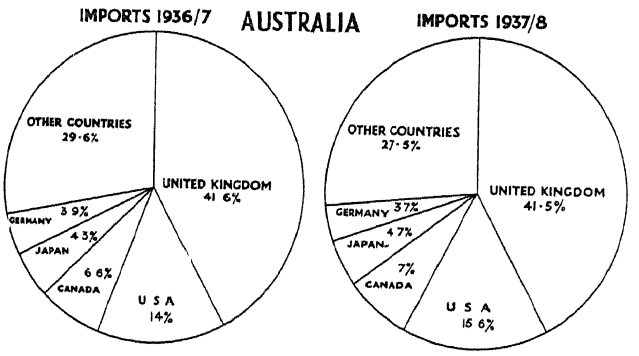
Economic Affairs. In the early months of 1938 there was serious drought in many pastoral areas. It was relieved by valuable rains in May, but some of the wool was lowered in quality, a fact that contributed to the fall in the average price received for wool later in the year. In the 1937–38 season the total receipts for wool sold through brokers were £16,660,000 less than in 1936–37. The average price fell from 16·48*d*. to 12·51*d*. a lb. The position of the balance of trade deteriorated, the credit balance on account of merchandise and gold being £30½ millions smaller than in 1936–37. Increased imports were largely responsible; they in turn were due to a high rate of internal activity and of capital investment. The imports included large quantities of machinery, which could be regarded as non-recurrent. Fortunately, Australia was well provided with sterling reserves, the total of the banks' London funds having been £71 millions sterling in June 1938. Thanks partly to a sterling loan and to an influx of capital from New Zealand and elsewhere, they had fallen by only £3 millions a year later.

Among the new industries established in Australia during the year were the manufacture of shale oil, of newsprint from eucalyptus gum trees, of alkali products, steel sheets for motor bodies, tung oil, aeroplanes, and carpets. Total factory production in 1937–38 (year ended June) was esti-

mated at £188 millions, an increase of £10 millions on the previous year. There was reported to be a shortage of skilled workers in some trades. This caused a renewed interest in the problem of immigration Skilled men or trainable boys were declared to be wanted in Australia, not farming settlers In a specific statement of policy the Minister of the Interior affirmed that no special encouragement would be given to alien, nor particularly to Jewish, immigrants. Any potential immigrants other than dependent relatives must possess funds assuring their independence, and must engage in occupations in which there was opportunity for their absorption without detriment to the chances of Australian workers In December, however, the government announced its acceptance of a plan to allow 15,000 refugees from Central Europe to enter in three years

A trade delegation consisting of Sir Earle Page, Mr R G Menzies, and Colonel White, with expert assistance, spent some months in England and the United States seeking new understandings on tariffs, to replace the Ottawa agreement and to fit in with the projected Anglo-American trade treaty. Australian opinion had taken exception to the general clauses of the Ottawa agreement, whereby the government undertook to revise the tariff in accordance with the recommendations of the Tariff Board, the latter being instructed to fix rates that would give United Kingdom manufacturers full opportunities of equal competition in the Australian market These provisions were regarded as infringing Australia's fiscal autonomy. No definite new agreement could be reached with the United Kingdom, but in a joint statement the two governments agreed in effect that the general clauses would not be strictly enforced, and that meanwhile Australia would make an industrial survey with a view to specializing on certain industries.

(H. V. H.)



Area and Population :

Total Area 2,974,581 sq. miles.
Population (June 30, 1938) 6,893,082.
Chief Towns, metropolitan populations 1936 .

Sydney .	1,267,350	Adelaide .	316,860
Melbourne .	1,018,200	Perth .	212,150
Brisbane .	313,430	Hobart .	61,500

Governor-General. The Rt. Hon. Lord Gowrie, V.C.
Language. English.
Religion. Christian. (1933 Census: Anglican 2,565,118; R.C. 1,161,455, Presbyterians 713,229; Methodists 684,022; Other Christians 603,914).
Production :

Wheat .	(1937–38) .	5,127,000	metric tons
Oats .	(1936–37) .	321,000	,, ,,
Barley .	(1936–37) .	164,000	,, ,,
Maize .	(1936–37) .	189,100	,, ,,
Potatoes .	(1936–37) .	452,000	,, ,,
Cane Sugar .	(1936–37) .	760,200	,, ,,
Butter .	(1936–37) .	178,800	,, ,,
Silver .	(1936) .	382·2	metric tons
Lead .	(1937) .	228,800	,, ,,
Pig-iron .	(1935–36) .	796,000	,, ,,
Wool, greasy	(1937–38) .	461,000	,, ,,
Wool clip .	(1937–38) .	£52,000,000	
Sheep .	(1937) .	115,500,000	(number)
Cattle .	(1937) .	13,911,659	,,
Wine .	(1936–37) .	10,235,000	gallons
Gold .	(1937) .	42,500	kilograms
Coal .	(1936) .	11,553,000	metric tons
Lignite .	(1936) .	3,004,000	,, ,,
Zinc .	(1936) .	71,600	,, ,,
Steel .	(1935-36) .	834,000	,, ,,

Manufacturing Industry :

Number of factories .	(1935-36)	24,894
Number of employees .	(July 1938 est.)	531,000
Recorded material production	(1936–37)	£A456,000,000
Building permits issued .	(1937–38)	£A56,000,000

Labour 1937-38 :

Index of factory employment (1928–29 = 100) .	124
Unemployment, trade union returns . . .	8·5%

Overseas Trade 1937-38, Merchandise :

Imports . .	£stg 111,476,000 (U.K. £47,131,155)
Exports . .	£stg 112,367,000 (U.K. £62,792,503)
Exports of gold .	£stg. 10,957,000

Communications and Transport :

Roads, total mileage .	(March 1937)	477,000 miles
,, metalled .	,, ,,	190,000 ,,
Railways open for general traffic	(1937)	27,890 ,,
Airways (1936–37), mileage flown .		8,731,612 ,,
,, ,, passengers carried .		102,164
,, ,, goods carried .		822,724 lb.
Shipping, overseas :		
Net tonnage entered (monthly average 1937)		523,000
,, ,, ,, .	(July 1938)	481,000
Net tonnage cleared (1937 monthly average)		528,000
,, ,, ,, .	(July 1938)	553,000

Finance and Banking :

Revenue . .	(1937–38) .	£A89,458,154
Expenditure . .	,, .	£A85,963,421
Revenue (est.) .	(1938–39) .	£A93,162,000
Expenditure (est.) .	,, .	£A93,136,000
Public Debt . .	(June 30, 1938)	£A1,275,026,000
Notes issued . .	(Oct 24, 1938)	£A43,030,000
Gold and sterling reserve	,, ,,	£stg.16,011,000
Exchange rate . . .		£A125 = £stg.100

Education, 1935 :

State Schools, 10,368 .	Average attendance 790,186
Private Schools, 1,875 .	,, ,, 200,539
Universities, number of students . . .	10,277

Defence :

Expenditure, 1938–39 . . . . £A16,796,000
Army, 1938: Permanent forces 10,170; Militia 50,000.
Navy, 1937: Personnel (sea-going) 371 officers, 3,889 men, 6 cruisers, 4 destroyers, 1 flotilla leader, 1 mine sweeper.
Air Force, 1937: Permanent force 227 officers, 1,853 airmen; First-line aeroplanes, 192.

Miscellaneous :

Motor vehicle registrations (July 1938): 531,370 cars, 242,498 commercial vehicles, 78,910 motor cycles.
Wireless receiving set licences . (July 1938) 1,064,254
Telephones, number of lines . (July 1938) 467,670

(W. H. W.)

AUSTRALIAN CAPITAL TERRITORY. In 1938 the name "Federal Capital Territory" was altered to "Australian Capital Territory". The Royal Military College was transferred from Victoria Barracks, Sydney, to its original site at Duntroon, a few miles from Canberra, where additional accommodation had been provided for the housing and training of cadets. Plans for the transfer of the Defence Department from Melbourne to Canberra were stated to be under consideration. In spite of considerable building activity a distinct shortage of housing was reported. Plans were begun for the enlargement and refurnishing of

the Governor-General's residence to accommodate the Duke and Duchess of Kent and their household when H.R.H should assume the Governor-Generalship in 1939

Statistics: Estimated population, Dec. 31, 1936, 9,787, No of sheep, Mar. 31, 1936, 228,000.

Finance, 1935–36: Receipts, £600,056; capital expenditure, £272,867; other expenditure, £886,110. (H. V. H.)

AUSTRALIAN LITERATURE. Though it cannot be claimed that the year 1938 witnessed the production of any work of outstanding merit, the Australian literary output has maintained a high level of competence, and has contributed further towards the growth of a sound literary background in keeping with the freedom and spaciousness of the Australian scene

Perhaps the most significant development has been the emergence of original criticism. In this respect, and quite apart from its own intrinsic worth, M Barnard Eldershaw's *Essays in Australian Fiction*, a series of critical essays on the work of eight living Australian novelists, can be regarded as an important landmark

Among other notable works of the past year was *Capricornia*, a first novel by Xavier Herbert, whose obvious sincerity, wide experience, and agreeable style combined happily to present a poignant but not too dismal picture of the aborigines. Eleanor Dark followed her *Sun Across the Sky* with *Waterway*, a story of the interplay of the forces of culture and materialism within a group of people living on the shores of Sydney Harbour. Seaforth Mackenzie's *Chosen People* had its setting in Perth, and *Portrait of Lucy*, by Winifred Birkett, the authoress of *Earth's Quality*, was a tale of pastoral life in New South Wales Alison McDougall's *Wind in the Spring* contrasted the peacefulness and youthful ardour of Australia with the turmoil and disillusion of the Old World.

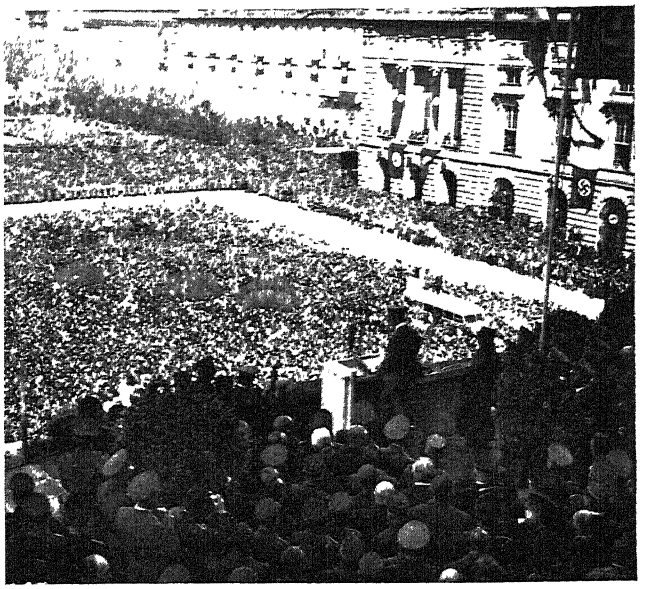
Not all novels were distinctively Australian in character and setting. Martin Boyd's latest work, *Night of the Party*, was a comedy of English social life, while Christina Stead, in *House of All Nations*, portrayed in her characteristic style the methods of modern international finance.

The year which marked the 150th anniversary of Australian history appropriately produced several distinguished biographies Following closely upon Dr. Mackaness's life of Arthur Phillip came M. Barnard Eldershaw's *Phillip of Australia*, which chronicled with imaginative insight and skilful use of documentary evidence the achievements of the founder of Australia. Mr Justice Evatt's *Rum Rebellion* refuted in convincing manner the detractors of the unlucky Captain Bligh; and *The Life Story of Joseph Furphy*, by Edward E. Pescott, was a colourful biography of the man who wrote in Australia as Tom Collins.

Collected poems by Hartley Matthews on Australian soldiers in the Great War appeared under the title of *Vintage*, and A. J. Coombes, in his prize-winning essay, *Some Australian Poets*, sounded a note of optimism regarding the present and future of Australian verse.

See H M. Green, "The Development of Australian Literature" (*Australian National Review*, Feb 1938); C. Hartley Grattan, "On Australian Literature, 1788–1938" (*Australian Quarterly*, June, 1938). (L. R. M.)

AUSTRIA. At the meeting of the Rome Protocol States in Budapest (Jan. 10–12) Austria showed signs of drawing closer to Hungary for mutual protection; but Italy no longer favoured this course. On Jan. 26 Nazi premises in Vienna were raided, the secretary (Dr. Taus) was arrested and deported, plans were discovered for a terrorist *coup* in March, to be followed by a German occupation. On



Keystone

HITLER ADDRESSING THE CROWD IN THE HELDENPLATZ, VIENNA, MARCH 16, 1938

Feb. 7 Herr von Papen induced Dr. Schuschnigg to accept an invitation from Herr Hitler to visit him in Berchtesgaden. Signor Mussolini urged acceptance At the interview (Feb. 11) Herr Hitler made demands, which were accompanied by an overwhelming display of military force, which would hardly have left Austria nominal independence, nor that for long. Schuschnigg reduced these to three: an amnesty for Nazis; their admission to the administrative and public life, although within the framework of the Patriotic Front; the appointment of Herr Hitler's nominee as Minister of the Interior, with control of the police. Herr Hitler gave him three days to fulfil these demands; Signor Mussolini absented himself from the telephone, "skiing". On Feb. 15 Germany accepted the reconstruction of the Austrian cabinet, which included as Minister of the Interior Dr. Seyss-Inquart, who, after arranging his own services and instructing the police, left for Berlin for further orders. The released Nazis organized feverishly, especially in Graz. Britain and France declared the initiative to be with Italy; but Italy on Feb. 17 only welcomed the situation.

Herr Hitler's speech of Feb. 20 gave little hope of more than a respite, although Schuschnigg was strengthened by the Austrian workers (the old Social Democrat party), who on Feb. 17 and 22 promised to support a "free" Austria, whereupon Schuschnigg began negotiating with them for a restoration of their liberties. On the same day he imposed a general ban on all meetings, and warmly defended his policy before the federal diet.

By March 8 agreement had been reached with the workers' representatives, who were promised equal treatment with other groups within the Patriotic Front, some genuine representation in the Trade Union Federation, liberty of speech, and certain social legislation. Meanwhile, however, the Nazis, encouraged by Seyss-Inquart, were strengthening their hold in the provinces, especially of the south. On March 9 Dr. Schuschnigg, speaking in Innsbruck, announced that he would hold a plebiscite on the following Sunday, March 13, on the question:

"Are you in favour of a free and German, independent and social, Christian and united Austria, for peace and work, for the equality of all those who affirm themselves

on behalf of people and Fatherland?" The polling age would be fixed at 24

Germany issued instructions that the plebiscite must be sabotaged by every means and clashes provoked to provide the Reich with pretext for intervention On March 10 and 11, Germany delivered three ultimatums demanding cancellation of the plebiscite Austria mobilized partially (March 11), but in some provinces the Nazis were already in control

At 6 p.m the plebiscite was cancelled At 7 30 Schuschnigg resigned, declaring that he did so in face of Germany's threat to invade Austria; and that he had ordered the troops not to resist, in order that German blood should not be spilt At 8 p.m. he was arrested At 2 30 a.m. on March 12, after long resistance, President Miklas (who also resigned the next day) appointed Seyss-Inquart Chancellor at the head of a Nazi government. It was stated that he then asked for German troops to enter Austria, but exactly when the first entry took place, and whether before, on, or without invitation, is still uncertain. On March 12 Austria was occupied by German forces. On March 13 it was proclaimed a "Land" of the German Reich.

Herr Hitler reached Vienna on March 14. Dr. Seyss-Inquart was appointed "Reichsstadthalter", Herr Keppler, and subsequently Herr Bürckel, becoming Reich Commissioner. On April 10 the union was ratified by 4,443,208 affirmative votes out of 4,460,778 cast (Jews were not allowed to vote). The name of Austria was changed to Ostmark, and it was reorganized into seven *gaue*. The Burgenland was partitioned between Styria and Lower Austria, Vorarlberg absorbed in Swabia. For other developments, *see* GERMANY.

See O. Dutch: *Thus Died Austria*, London (Arnold's), 1938. (C. A. M.)

Area and Population:
Area 32,369 sq. miles.
Population (Dec. 31, 1937 estimate) 6,754,000.
Chief Towns (pop 1934): Vienna, 1,874,130; Greater Vienna, Oct. 1938, 2,087,000; Graz, 152,841; Linz 108,970, Innsbruck, 61,009; Salzburg, 40,232.

Governor: Dr. Arthur von Seyss-Inquart (representing Adolf Hitler).

Language. German.

Religions (1934) Roman Catholic 90·5 per cent; Protestants 4·4 per cent; Jews 2·8 per cent.

Production (1937):

	Metric tons		Metric tons
Wheat	393,800	Lignite	3,242,000
Barley	249,700	Coal	230,000
Oats	413,500	Iron-ore	660,000
Rye	427,500	Pig-iron	389,000
Potatoes	3,220,000	Steel	657,000
Maize	181,200	Artificial Silk	1,000
Sugar-beet	139,900	Wood Pulp	414,000

Industry:
Index of Production (1937 average) 106
(1929 = 100) (June 1938) 112

Labour:
Number employed (1937 average). 976,000
Unemployed on benefit (1937 average) 231,313
Unemployed on benefit (Aug. 1938) 92,000

Overseas Trade, Merchandise 1937:
Imports 1,453,700,000 schillings
Exports 1,216,900,000 "

Communications and Transport 1937:
Roads, main: 85,923 km.; municipal, 4,442 km.
Railways, State 85,923 km.; private 859 km.
Airways: Route mileage 2,443 km.; passengers carried 50,047; passenger mileage 2,381,720 km.; freight carried 1,340,651 kg.

Finance and Banking:

	Schillings
Revenue, ordinary (1937 38 estimate)	1,951,500,000
Expenditure, ordinary " "	2,012,500,000
Public Debt (Dec. 31, 1937)	3,482,100,000
Notes in Circulation " "	914,000,000
Gold Reserve " "	243,000,000
Foreign Assets " "	161,000,000

Education 1936–37:
Primary Schools 14,490, scholars 822,857.
Middle and High Schools 81,300 scholars.
Universities 4, scholars 13,412

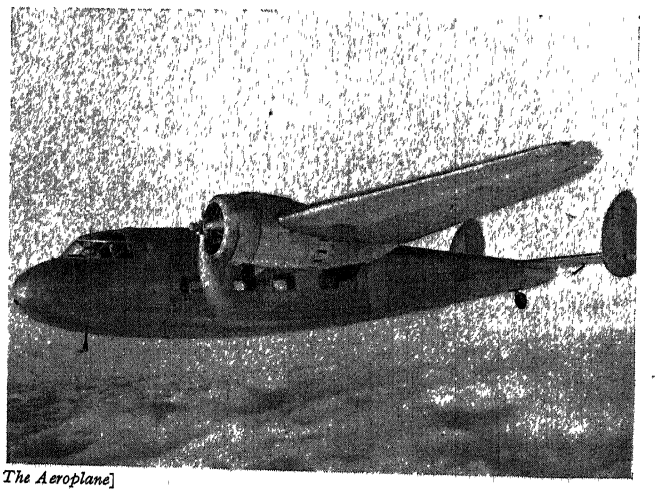
Miscellaneous:
Motor vehicles licensed (Sept 30, 1937): 28,081 cars, 4,292 taxis, 13,817 commercial vehicles, 2,392 motor-cycles.
Wireless receiving set licences (Dec. 31, 1936) 593,815.

AVIATION, CIVIL. During 1938, the steady progress of civil aviation was hampered by the universal political uncertainty, which everywhere seemed to be forcing it along lines helpful for military purposes, but to its own disadvantage.

Otherwise, the autumn political crisis has proved the commercial aeroplane to be an effective means of peace, possibly without its help, the actual outbreak of a war could not have been prevented during the crisis Certainly, in future aerial transport will have still more influence upon the mutual relations of nations, and it may not be a futile hope that a commonwealth of all civilized nations will be shaped and strengthened by the increasing traffic through the air

Air attacks on scheduled air-liners in Spain and China have urged the necessity for an international law code dealing with the civil air traffic over territories in which warlike operations are being conducted.

Commercial Development. With regard to rentability, most long-distance air routes, especially those across the sea, are not yet self-supporting. A good example is the experience gained with the American Trans-Pacific route operated by Pan-American Airways since the end of 1935. On the route San Francisco–Hong Kong, losses of £99,655 during 1937 and of £78,389 during the first half of 1938 were experienced. A self-insurance at the rate of 10*d.* per machine-mile brought the monthly loss since that period to about £20,000, despite the good frequency and the fact that more than 500,000 machine-miles were flown before any accident occurred. Therefore, the present mailing rate on this route of 16*s.* 9*d.* per machine-mile is considered too low; rates of £1 9*s.* 7*d.* and £1 13*s.* 7*d.* have been suggested by



The Aeroplane]
DE HAVILLAND "FLAMINGO" AIR-LINER, FOR 20 PASSENGERS, WITH 200 M.P.H. CRUISING SPEED

P A A. for the standard 800-lb. load of mail With Imperial Airways the average expenditure on a ton-mileage basis was stated to be 3*s.* 10*d.* during 1938.

For the future the prospects for rentability appear hopeful, and this accounts for the growing interest large shipping companies are taking in transoceanic air routes

Imperial Airways and British Airways which are being merged into a national air-line company, will in future be more connected with the sphere of British shipping interests, since the new managing director can be considered an exponent of British shipping. P A A. has recently come to an agreement with American Export Air Lines, an association of American shipping companies, and the transatlantic services with Mediterranean countries will remain reserved for American Export Air Lines

The year's progress in transatlantic air services undoubtedly did not come up to expectations. Britain achieved only one flight of fifteen intended experimental crossings. Technical difficulties during tests with new equipment were the cause, besides delays due to the expansion of the air force The enlarged Short flying boats have only recently been delivered, and the De Havilland "Albatross" experimental air-liner suffered from the same fate One successful crossing was accomplished by the Short-Mayo "Mercury" four-engined floatplane, the upper component of the Short-Mayo composite aircraft.

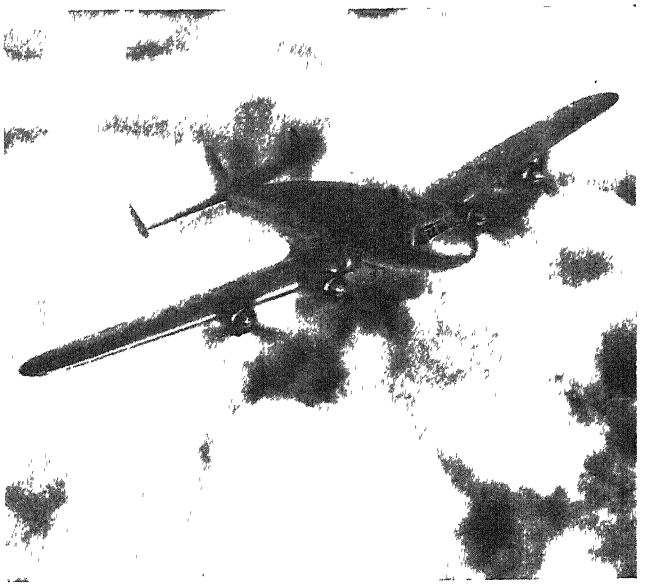
The United States had intended 15–25 crossings by P A A. with a new flying boat model, the Boeing Clipper, which still appears to be under trials. Therefore, no experimental crossings have been realized.

Germany can claim the major success of transatlantic flying in 1938. Not less than fourteen crossings have been accomplished (thirteen with Diesel-engined Hamburg floatplanes, and one with a four-engined Focke-Wulft Condor landplane).

France has made one successful northern crossing with the well-known "Lieutenant-de-Vaisseau Paris" flying boat, while another flight was prevented by the September crisis. An excellent record was achieved by Codos and a crew of five with a flight from Paris to Santiago-di-Chile in nearly 59 hours, with a Farman 2231 landplane.

While technically the problems of a scheduled transatlantic service could be mastered, the meteorological problems are still not so fully understood that a schedule could be maintained during all seasons. The major difficulties are presented by the northern Atlantic route, and since for Great Britain and for North America the northern route is the more essential one, the meteorological aspect of this route is intensely studied. It is obvious that an air traffic striving for rentability has to make use of the prevailing weather conditions. During the winter, gales are dominant within the normal flying altitudes, the main gale zone being located between 40° and 50° N. and 30° and 40° W. The route across the Azores is considered more favourable than via Ireland–Newfoundland, in spite of being 500 miles longer. Of meteorologically more stable appearance is the northern route via Iceland–Greenland–Labrador, but research has indicated that strong gales can be experienced up to 30,000 ft. in height, and that the icing-up danger is predominant. By intelligent navigation in vertical and horizontal directions, the flying times can be greatly influenced.

The promotion of air routes operating at great heights ("over-weather flying") has still to deal with major problems. Research has shown that at the altitudes proposed (20,000–30,000 ft.) strong gusts and clouds can be encountered influencing safety and comfort, and that electrostatic



MODEL OF FAIREY F C I AIR-LINER, FOR 30 PASSENGERS, WITH 225 M P H CRUISING SPEED

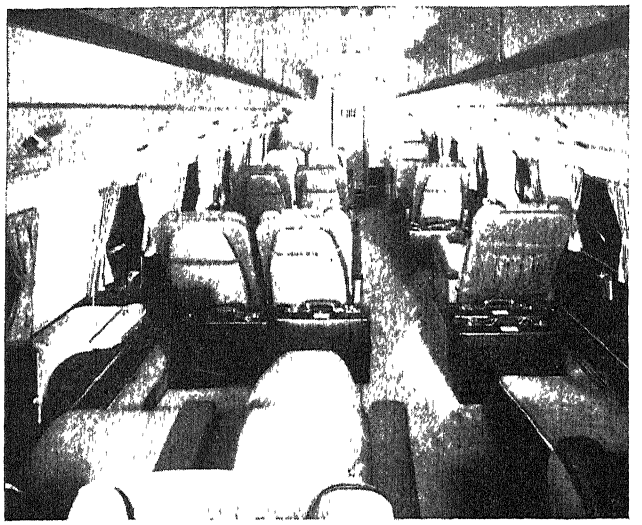
disturbances are generally of such a magnitude that wireless reception is seriously impaired. It has been assumed, therefore, in many circles that hopes for regular substratospheric air lines are exaggerated, and will not come true for a long time; but orders placed by the British Air Ministry quite recently seem to indicate that efforts in this direction are not to be discontinued. In France, Farman landplanes, with pressure cabins for sub-stratospheric flying are being prepared for experiments on the North Atlantic route during 1939

In spite of all efforts, a scheduled transatlantic service cannot yet be expected for the near future. The German Luft Hansa has recently announced a regular transatlantic passenger service, but as political difficulties are preventing a German air route to the U.S.A., the announcement can be considered of publicity value only. The problem of rentability and pay load still remains, and from the view-point of rentability, a passenger service appears to be the least prospective one.

On the route to South America via Africa, British Airways investigated the possibilities of a mail and passenger service from England to Argentina, Brazil, and Uruguay. The Portuguese government entered into agreements with Great Britain, France, Germany, and the U.S.A. for the use of the Azores in transatlantic air services.

New air routes proposed and studied recently include a northern Pacific route leading from Canada across Siberia to Russia. More ambitious is a route from Russia across the Polar regions to North America. Two successful Russian flights seem to have paved the way. Another proposal concerns a direct air route over the sea from Africa to Australia via the Cocos Islands, and will certainly be of value for safeguarding Great Britain's vital air connexion in the case of a major war.

The Imperial Air Mail Scheme which Great Britain inaugurated in 1937 has proved a complete success, of which the British Empire can be proud. The all-up air-mail service to Australia began to run during 1938. First-class mails to Australia and New Zealand are carried three times a week between England and Australia. The mail arriving by Imperial Airways flying boats at Darwin is transferred to Australian air routes. An air-mail service between Australia and New Zealand will be included in the near



K.L.M. Royal Dutch Air Lines]
INTERIOR OF ROYAL DUTCH DOUGLAS D C 3 AIR-LINER AS USED ON THE FAR EASTERN ROUTES

future. In order to speed up the air-mail service, Imperial Airways are preparing facilities for night flying on the routes to South Africa and to Australia.

Air-mail transport facilities at a flat rate for ordinary first-class mail are already working between England and 25 foreign countries, with the abolition of the air-mail surcharge hitherto in force.

In 1938 inquiries were brought into the working of civil aviation in England The Cadman committee report criticized the lack of British commercial aircraft, requested a change in organization, and advised against subsidizing air routes which are run in competition. The external air lines should be allocated between Imperial Airways and British Airways after administrative reorganization of these companies. The development policy of the Air Ministry was criticized as not sufficiently encouraging. As a result the government decided to amalgamate Imperial Airways and British Airways with an increase of the subsidy up to £3 millions.

Air services within the United Kingdom have now become subject to a licence granted by an Air Transport Licensing Authority established during the last year. An annual subsidy by the government of £100,000 is being granted for five years. All established air lines will share in it, with a top limit of £15,000 for each operator, to be calculated at a rate of 6*d* per capacity ton-mile for the first year. Eleven operating companies will benefit by this scheme.

In the United States, not less than 30,000 miles of internal air routes have been operated on regular commercial schedules during 1938. Twenty operating companies are running services to a time table; a greater number of additional air transport companies are operating taxi services.

The basis of the American airways system has been the mail service, the post office awarding mailing contracts for fixed routes and scheduled services. The mailing rates are subject to the approval of an Interstate Commerce Commission. Owing to the effects of the 1934 Air Mail Act, the subsidy of the operating companies for the transport of mail has been gradually decreased, so that at present passenger and freight receipts take the major share in the household of the United States air transport. Competition has reduced passenger fares to a large extent and, with regard to comfort, the American air traveller is treated better than the railway passenger. Free meals are served, air hostesses have proved of greater value than mere publicity, especially for nervous passengers, air conditioning and sound proofing are common, and other items have raised the convenience of travelling over long distances The freight business is centrally handled by a subsidiary company of the Railway Express Agency, under a recent pooling agreement, which also enables a joint rail-air service Incidentally, export freights by air have become a common feature, a special object being the increasing export of young chickens to South America (monthly more than 1,000,000 chickens).

The air routes operated are coast-to-coast lines (United Air Lines, Transcontinental and Western Air, American Airlines), north-to-south lines (Eastern Air Lines, Pan-American Airways), and feeder lines

The policy of the last years has been a continuous drive for speedier and bigger air-liners, with four instead of two engines It now appears that for reasons of rentability a change of this policy is taking place. Big air-liners require large aerodromes which are becoming too great a financial burden, and the investment in big and expensive aeroplanes has become a somewhat uncertain and risky business The export business for American transport aeroplanes has steadily grown up to a large extent.

The British Dominions and colonies are having their good share in the general progress of commercial aviation. Australia (Quantas Empire Airways) is operating Short Empire flying boats in connexion with Imperial Airways. The demand for air-mail carriage became so great during the end of 1938 that Imperial Airways decided not to book any more passengers on the Middle East and Far East routes for a period of several months

Canada has reorganized its air routes by the formation of a major operating company, Trans-Canada Air Lines Ltd. American equipment is being used. Canadian Airways Ltd is the only remaining independent company of significance.

South Africa is still depending mostly on German equipment, because of the lack of production in England, and a substantial order for four-engined Junkers air-liners has just been placed.

New Zealand, with a longest internal air route of 760 miles, no subsidies, and no payment for mail carried, has 1,700 route-miles of scheduled air services and an excellent safety record, no passenger being injured in more than 3,000,000 miles of scheduled flying.

In France, Germany, Holland, Switzerland, Italy, Belgium, etc , the progress in commercial aviation has been a steady one. In spite of a number of severe accidents, the record in safety and regularity has been surprisingly high. American air liners are being used to a large extent. A unification of air-line operators has taken place in Japan, where the subsidized Dainippon Air Line Company will operate all routes inside and outside Japan.

Private Flying. In England, the Civil Air Guard Scheme originated in July 1938. It is a preparation for an air force reserve in the case of an emergency. Everybody between eighteen and fifty years of age of either sex can join, provided he or she can pass the medical tests required for a private pilot's licence. The applicants usually join through a recognized flying club, which gets a government subsidy based on the amount of flying training. Light and normal class of training aeroplanes are admissible for the training, but are differently valued; for an "A" licence earned on a standard training aeroplane (above 1,200 lb. flying weight) a club will receive £50, and £30 for a pilot trained on a light aeroplane (below 1,200 lb. flying weight). Up to ten hours flying are subsidized for every C.A.G.

member per year. In an emergency, C A G members are bound for service of any kind with the R A F.

In spite of its military purpose, it is quite obvious that the C A G Scheme will stimulate the development of private and sporting flying Thousands of people who before could not afford to take up flying will be induced to take an active part in aviation, and a good number of them will certainly stick to it The private owner aeroplane and the gliding movement will profit by this increased interest

In the U S A, the Civil Aeronautics Authority has recently created a new unit responsible for the control and encouragement of private flying In 1937, private pilots with 10,000 aircraft flew not less than 103,000,000 miles, carrying 1,500,000 passengers (while 300 air-transport operating aeroplanes flew 66,000,000 miles, carrying 1,102,707 passengers). The new administrative authority simplifies the type certificate requirements for private aircraft, and brings about more uniformity between State and Federal regulations.

The year brought a steady progress in motorless flying (*see* GLIDING) Progress with rotating wing aircraft has not, however, been so marked as it was a few years ago. The use of gyroplanes remains restricted to military purposes All helicopter records are still held by the Focke-Achgelis helicopter Cross-country flights of several hours' endurance have been achieved, and the manœuvrability of this unique aircraft has been demonstrated by exhibition flights inside the Deutschlandhalle at Berlin, Miss Hanna Reitsch being at the controls.

With commercial airships, progress has nearly stagnated since the "Hindenburg" disaster. A new Zeppelin airship "L Z 131" has, however, been completed in Germany for the transatlantic service. The American government had to refuse an export licence for the helium filling gas required for this airship, as no guarantee could be obtained from the Zeppelin company that the gas would not be used for military purposes. As the new airship, the "Graf Zeppelin II" is designed for the use of helium gas, only trial flights have so far been accomplished with hydrogen filling.

Technical Development. The trend of technical progress for the improvement of transport efficiency has remained unchanged, safety in flying still being considered a secondary condition. But there are indications that the present trend will undergo a change, since the amount of severe and impressive accidents in scheduled air transport is obviously influencing and terrifying the man in the street as a prospective passenger. It does not matter much for the potential air traveller that reliable statistics prove a high safety in scheduled air traffic. The belief in statistics is nowadays not too deeply rooted, and as the newspapers are reporting an air accident nearly every day and perform this as impressively as possible, the time is approaching when an aerial traveller may again be regarded as a hero.

Otherwise, air transport has now become indispensable, and this seems to explain why the sale of tickets has not dropped to a much lower level Incidentally, statistics of Imperial Airways show that forty per cent of the passengers carried on Empire routes are men on business, thirty-five per cent government officials, twenty per cent pleasure travellers, and five per cent passengers on urgent private journeys.

High speeds and small-speed ranges will always be connected with danger. Flat gliding and climbing angles, long take-off runs, and high landing speeds tend to outgrow the dimensions of the existing aerodromes. Peculiarities connected with certain aerodynamical refinements require more skill in the control of modern air-liners. Crashes which otherwise might result in not too serious consequences are still being aggravated by fire. The strain on the pilots tends to become excessive, hence accidents even with pilots of outstanding experience The problems of bad-weather flying of fog landings, of electric discharges, and of icing-up are not yet fully mastered, while high cruising speeds and the endeavour to obtain 100 per cent regularity are increasing the risks connected with adverse climatic conditions

An analysis of accidents shows that 31 per cent personnel, six per cent power plant, and 22 per cent structural failures (nineteen per cent of the latter caused by undercarriage trouble) compare with 41 per cent failures due to bad weather and to deficiencies in the ground organization.

For all these reasons the trend for raised performances will change. Air-transport operators in the U.S A. have already hinted that transport speed will not increase. The interest in the compression ignition engine using heavy fuels is growing, but it must be realized that even engines of this kind, which are successfully favoured with German transport aircraft, cannot be considered completely fireproof. Incidentally, a Dornier D. 18 flying boat with two Junkers compression ignition engines flew a distance of 5,242 miles in 43 hours from a catapult ship off Start Point (Devon) to Caravellas in Brazil, and gave another proof of the low fuel consumption of this engine type.

The position of the British market for commercial aircraft has resulted in efforts to produce modern air-liners in England. The 5,600-h.p. Short G-class flying boats for transatlantic service (larger than the Empire class, which is performing so well), the De Havilland Albatross landplane, and the Armstrong-Whitworth Ensign landplane, all equipped with four engines, have only recently come into service, after considerable delay. In preparation are the twin-engined De Havilland Flamingo high-wing landplane for twenty passengers, a Fairey four-engined air-liner with pressure cabin, new Short landplanes and flying boats, etc. A mark of progress is the introduction of Bristol sleeve-valve engines, giving a higher take-off output and greater ranges. The Mayo composite launching system has proved its value, and the perfection of the principle is well under way.

A fair amount of progress has been achieved with high-flying commercial aircraft. Experimental flights have been carried out in the U.S.A. up to 32,000 ft. It seems that most of the technical requirements (pressure cabins for passengers, air conditioning, supercharging of engines, structural problems, etc.) can be fulfilled. Special transport aeroplanes equipped for high altitudes are under construction in America.

Schemes for refuelling during flight have given satisfaction during severe trials in co-operation with Imperial Airways, and it may be assumed that British commercial air routes will see the introduction of refuelling in flight fairly soon.

The British air traffic wireless system has recently undergone an organization into fifteen areas covering England, Scotland, and Northern Ireland. Four types of wireless service are provided. routine messages between ground stations; communication and direction finding between aircraft and the ground; weather information at fixed times; radio beacon service (homing devices) and landing approach help. The radio beacon system, extensively used on U.S.A. air routes, has recently been accused as being responsible for a number of severe accidents, and the introduction of the European system of wireless direction finding

is under consideration as an additional means of safeguarding air-liners in bad visibility.

Unfortunately, progress in blind-landing devices is slow A majority of all accidents is still due to low flying in conditions of bad visibility Even the problem of height-above-the-ground indicators cannot yet be considered as solved, but new radio altimeters, depending upon the reflection of ultra-short waves, seem promising Blind-approach systems are being perfected, and give much assistance in scheduled air traffic

De-icing equipment has become compulsory, but is still far from absolute reliability. New research work undertaken in England has opened somewhat better prospects than the mechanical devices hitherto in general use.

While the increase in size has come to a certain limit with landplanes, flying boats as air-liners of huge size are coming along. One of the largest at present under construction is a French six-engined flying boat of 65 tons all-up weight, 9,000 h.p, and 260 m p h. maximum speed

See also AERONAUTICS, AIRPORTS; AIR RACES AND RECORDS. (A R. W)

AZERBAIJAN S.S.R. On June 24 the elections to the Supreme Council of this Soviet Socialist Republic of the U.S S.R. took place, and 99·36 per cent of the electorate recorded their votes. In the capital, Baku, the percentage is said to have reached even 99·9. As a result, 231 communists and 79 non-party candidates were returned The territories attached to Azerbaijan, the Nakhichevan Autonomous S.S.R. and the Nagorno-Karabakh Autonomous Province, elected also in June their respective Supreme Councils, at which more than 99 per cent are said to have voted for the block of communists and non-party men, who were alone permitted to stand On Aug 24, ten former leading officials of the Republic were sentenced to death for high treason From April 5 to 15 a Festival of Azerbaijan art was held in Moscow and was a great success.

Area and Population :

Area 33,205 sq. miles

Population (1933) 2,891,000 (rural, 1,921,000, urban, 970,000, comprising some 20 nationalities, of which 63·3 per cent are Turks, 12·4 per cent Armenians, 9·7 per cent Russians)

Leading Cities (1936 populations): Baku (the capital) (702,000), Kirovabad (formerly Gandzha) (60,700), Nukha (30,900)

Economic Life :

Invested in agriculture (1934 37) 227·5 million roubles.

Collective farms (1937) 3,054

Large machine and tractor stations, 57; tractors, over 5,000.

Cotton yield (1937) . . . . . c. 200,000 tons

Oil output, daily . . . . 65,000 ,,

Power stations 80

Budget (1938) . . . . . 916 million roubles

Education :

Expenditure (1937) 268·3 million roubles, schools (1937), 3,304, with 620,400 pupils, of whom over 100,000 were girls, higher educational institutions, 16; workers' faculties, 26; technical colleges, 68, with 40,000 students. Illiterates, 10 per cent of population.

(S. YAK.)

AZORES. A group of nine islands (Flores, Corvo, Terceira, São Miguel, Santa Maria, São Jorge, Pico, Fayal, Graciosa) in the Atlantic, which constitute an administrative area of Portugal.

Total Area 922 sq. miles

Population (1930 Census) 253,935.

Chief Towns : Angra 10,642, Ponta Delgada 18,022.

B

BACKHOUSE, SIR ROGER ROLAND CHARLES, G.C.V.O., K.C.B., C.M.G. (1878–). British admiral and First Sea Lord, is of old Yorkshire family, being third (twin) son of the late Sir Jonathan Edmund Backhouse, first baronet, and brother to the present baronet. His life has been spent in the Royal Navy, of which he became lieutenant in 1899, commander 1909, captain 1914, rear-admiral 1924, vice-admiral 1929, and admiral 1934. He served throughout the World War, and in 1916 followed Lord Chatfield in the command of the "Lion", flagship of the 1st Battle Cruiser Squadron of the Grand Fleet. From 1920 to 1922 Sir Roger was Director of Naval Ordnance, and in 1924–25 Naval A.D.C. to the King; in 1926 he was put in command of the 3rd Battle Squadron Atlantic Fleet, and in 1928 appointed Third Sea Lord and Controller of the Navy, an office he relinquished in 1932 on being placed in command of the 1st Battle Squadron and second in command of the Mediterranean Fleet. From 1936 till his present appointment, which was made in Feb. 1938 to take effect in the following September, he was in command of the Home Fleet. Sir Roger is married and has two sons, the elder of whom is in the Royal Artillery, and four daughters.



Vandyk]
ADMIRAL SIR ROGER BACKHOUSE

BACON: *see* PIGS AND BACON.

BACTERIOLOGY.[1] Investigations into the interaction between bacteria and bacteriophage have revealed that, contrary to previous ideas, bacteriophage multiplication may occur without a simultaneous bacterial growth (although not in the absence of bacteria). This phenomenon was demonstrated in broth containing 0·25 molar sodium chloride, and in broth acidified to pH 6·0 and incubated at 28° C. Further, bacteriophages may carry with them substances stimulating bacterial growth, (1) whilst certain staphylococci contain a polysaccharide which inhibits bacteriophage action. The activity of lysozyme, the bacteriolysin of egg-white and tears, has almost certainly been traced to an enzyme, a nucleotidease, which hydrolyses the organic phosphorus-containing substances called nucleotides.

Cancer research has shown that virus-like substances can be obtained from chicken tumours. These caused tumours when inoculated into rabbits, especially if the skin bore tar-induced warts. The latter, in the absence of the virus, disappeared. Ether anæsthesia or alcohol intoxication completely destroyed the resistance of animals highly immunized against pneumococci. The loss of resistance, which was manifest only whilst the stupor was maintained, was due to the prevention of leucocytic migration to the site of infection so that instead of a localized lesion, a rapid invasion of the blood stream occurred. Evidence, based on serum reactions, has been secured, which indicates that poliomyelitis and dysentery, which resemble one another in symptoms and time of occurrence, may have the same causal agent. Undulant fever appears to have a lengthy incubation period—ten weeks to the earliest symptoms and thirteen weeks before severe symptoms arise.

Germicides for use on living tissues should combine high germicidal properties with low toxicity for tissues. In new methods of evaluating germicides, (2) a "toxicity index", a measure of both functions, is obtained. To satisfy the requirements, the index should be low. Many phenol derivatives are satisfactory, whilst iodine has the lowest index yet recorded. The mode of action of sulphanilamide, employed in antistreptococcal therapy, is still obscure. Apparently, *in vitro* sulphanilamide causes a slight reduction only in the growth rate of streptococci, and is unable to neutralize toxin or prevent its formation.

Delicate methods are required for the extraction of unstable bacterial antigens. Supersonic vibrations, which kill and disrupt bacteria, were used to liberate the antigen from group A streptococci. A soluble antigen obtained from type I pneumococci stimulated the production, in mice, of antibodies conferring protection against virulent type II and type III pneumococci, in addition to the homologous type. The multiplicity of serological types among streptococci renders serum therapy very uncertain. However, a vaccine, prepared from the repeatedly frozen and thawed cells of an avirulent rough variant of an erysipelas strain, afforded considerable protection to mice against virulent streptococci from a number of different sources. Convalescent scarlet fever patients are liable to reinfection by streptococci of another serological type. Reinfection occurs through contact with other patients, indicating the advisability of separate wards for scarlet fever cases, or small wards limited to cases caused by the same serological type. Usually three or four types are prevalent in one epidemic. The validity of the accepted serological grouping of the Flexner dysentery bacilli has been questioned. (3) The evidence suggests that the V, W, X, and Z races, hitherto regarded as each possessing its own type antigen plus minor amounts of the others' type antigens, really have a common group antigen and a distinct type antigen. Race Y is regarded as having lost the type antigen. Two new antigens of the *Salmonella* group, one somatic (XX), and the other flagellar (z6), were noted in a new species, *Salmonella kentucky*, whose formula is VIII, XX: i—z6:—. The "IV-variants" of *Salmonella typhi-murium*, namely, those lacking the antigen V, were shown to be almost invariably of pigeon origin.

New plant pathogens continue to be described. Leaf-spot diseases were caused by *Pseudomonas acernea* (*Acer trifidum*), *Bacterium cassavæ* (*cassava*), *Bact. lingustrum* (privet) and *Bacillus butyricus betæ* (sugar beet). *Erwinia cytolytica* caused a stem rot of dahlias, and *Ps. rimæfaciens* a canker of poplars. Tumours on chuckawallas (*Sauromalus varians*) were due to *Bact. sauromali*. A new type of

[1] Reference may be made to *The Principles of Bacteriology and Immunity*, by Topley and Wilson, 2nd edition, 1937, for an explanation of technical terms used in this article.

lactic-acid producing organism—a sporing rod—was described It produces lactic acid almost quantitatively from glucose, and a high-grade product can readily be isolated Potato starch preparation may be facilitated by an organism resembling *Bacillus felsineus*, which destroys cellulose and other cell-wall material, but not native starch *Chromobacterium prodigiosum* was the cause of an epidemic amongst desert locusts Past efforts to employ bacteria against insect pests met with difficulties, but a new method, in which an emulsion of the spores of bacteria pathogenic for insects is sprayed on to plants, has had considerable success against vine pests (S E J)

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BADMINTON. This game is still growing in favour, there are now 1,300 clubs affiliated to the English Badminton Association, while during 1938 the U S.A. and the Malay Straits joined the International Federation, which now has fourteen members.

Entries for the All England Championships, held in London in March, were up by twenty per cent and attracted many Danes (one of whom, J. Bie, reached the final in the men's singles) and the Swedish men's champion. R. C. F. Nichols again secured the men's singles, and with his brother, L. Nichols, again won the doubles title. The ladies' singles fell to Miss D. C. M. Young, the ladies' doubles to the 1937 winners, Mrs. H. S. Uber and Miss D. Doveton, the mixed doubles to R. M. White and Mrs. Uber, and the veterans' doubles to R. G. Commin and C. Meades, the holders.

Cambridge won the inter-Varsity championship for the ninth successive year; the County championship went to Lancashire, with Sussex as runner-up, and a competition for County second teams, held for the first time in 1938, was won by Sussex Second.

No changes were made in the rules of play, but the International Federation sanctioned a slight alteration in the making of shuttles intended for use in countries in which climatic conditions render the standard make unsuitable

At the seventeenth annual Canadian championships, in Quebec, nineteen-year-old Johnny Sams of Vancouver beat Jack Storey of Toronto by 15–12, 15–10 In the women's singles, Mrs W R. Walton of Toronto beat Mrs Perodeau of Ottawa 11–4, 11–4 The American men's and women's singles were won by Walter Kramer of Detroit and Mrs Karkhull respectively.



D. R. Stuart]

R. C F. NICHOLS (RIGHT), BADMINTON SINGLES AND DOUBLES CHAMPION, AND HIS BROTHER, LESLIE, WITH WHOM HE WON THE DOUBLES

BAHAMAS. On Discovery Day, 1938 (Oct 12), the Bahamas Government Development Bureau was opened in London by the Under-Secretary of State for the Colonies

The year saw the first harvest of cultivated sponges At the end of 1938 a bed of 180,000 artificially cultivated sponges was destroyed, probably by subterranean seismic disturbance

There was considerable development of the Out Islands, especially Eleuthera, Grand Bahama, the Bimini, Gap Cay (where a permanent camp for big-game fishermen was established), and Andros (new roads, landing wharf, and sailing club) Two seaplanes were added, making four to link up the Out Islands.

A record tourist season was enjoyed The new Shoreham Hotel was opened in December, and negotiations were successfully concluded for the taking over of the British Colonial Hotel by a Canadian millionaire. The Emeral Beach Club was opened. (A. A)

Area and Population :
Area 4,375¼ sq. miles.
Population (Dec 31, 1936) 66,219 (estimate).
Governor : The Hon. Sir Charles F. Dundas, K C.M G
Production, 1937 :

Sponge	(Export £73,788)	Sisal	(Export £8,477)
Tomatoes	(,, £15,561)	Crawfish	(,, £6,890)
Sheep, 18,600 (number)		Goats, 10,654 (number)	

Overseas Trade, 1937 :

Imports (total)	£1,219,353
Exports (domestic)	£164,857
Re-exports	£130,219

Roads, 1937. 487 miles suitable for motor traffic.
Finance and Banking :

Revenue, ordinary (1938)	£413,952
Expenditure, ordinary (1938)	£400,681
Public Debt (Dec. 31, 1937)	£144,275
Notes in Circulation (Dec. 31, 1937)	£74,400

Education :
Government schools: scholars—boys 4,402, girls 4,181
Private schools: scholars—boys 2,791, girls 4,807
Secondary schools: scholars—boys 202, girls 201.

BAHREIN ISLANDS. Trade continued good during the year and the pearl-diving industry showed some improvement, though prices still remained low owing to the effect of the European situation on the pearl market. Government revenue expanded somewhat as a result of the continued development of the Bahrein Petroleum Company's oilfield. But as over one-third is absorbed by the civil list and the oil royalties due to the ruling family, it was not possible to put into effect any new schemes beyond the construction of a large hospital which will have an English doctor and woman doctor on its staff. (A. Mn.)

Area and Population :
Area 213 sq. miles.
Population (Dec 31, 1936 estimate) 120,000.
Ruler : H.H. Shaikh Sir Hamad bin Isa al Khalifah.
Language. Arabic.
Religion. Mohammedan.
Production, 1937. Crude petroleum, 1,062 metric tons
Overseas Trade, 1936–37 :

Imports	£5,000,000
Exports	£3,000,000

BAKERY PRODUCTS: *see* BREAD AND BAKERY PRODUCTS

BALANCE OF TRADE. In the course of 1938 some of the factors that had affected national balances of trade in 1937 were reversed, or rather the tendencies that began to show themselves in the latter part of 1937 were continued and intensified. Those tendencies included a substantial fall in the prices of primary commodities, associated with very much reduced purchases by the United States, a corresponding fall in shipping freights, with consequent effects on invisible balances of payments, and a tendency for primary producing countries to incur deficits on their external balances as a result of continued high imports while their exports fell in value. The distortions of world balances of trade, produced by the wars in Spain and the Far East, were protracted. There was no significant change in the small international flow of long-term capital, but there were two outstanding movements of short-term capital: a return of "hot money" to France after the formation of M. Daladier's government and the new depreciation of the franc; and a refugee movement of European capital to the United States during the period of war emergency in September and subsequently.

United Kingdom. In spite of lower prices ruling for primary products, imports into the United Kingdom continued to run at a high level, the average monthly figure being £72·3 millions in the first half of 1938, against an average of £79·5 millions in 1937. The export market, however, was depressed. The *Economist* index of the volume of exported manufactures (1935 = 100) fell from 113½ in July 1937 to 93½ in July 1938. The total adverse balance of commodity trade in 1937 had been £432 millions, in the first half—usually the more favourable half—of 1938, it totalled £401 millions. The proportion of United Kingdom exports going to Europe was actually rising slightly, despite the disturbed political conditions; the depression came in exports to foreign countries outside Europe, notably Japan, China, Mexico, Brazil, and certain other South American countries, and the United States. The bilateral balance of trade with the last-named country showed a striking change. In the second quarter of 1937 there had been a debit balance of £13·1 millions against the United Kingdom on a total trade of £33·7 millions; in the second quarter of 1938 the total trade had fallen to £31·7 millions, but the adverse balance had risen to £20·5 millions.

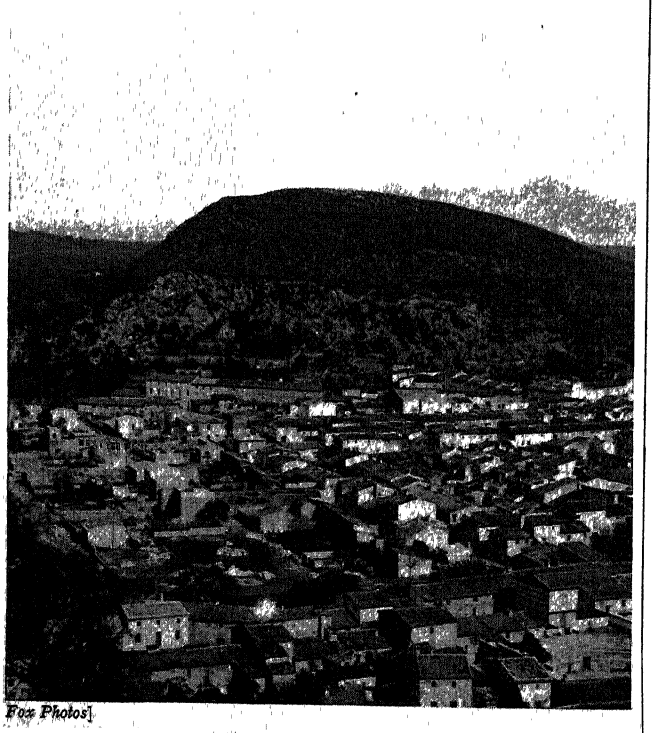
United States. An enlargement of export balances was indeed characteristic of the United States' international trade in 1938. In the twelve months ended June 1937, she had actually had an aggregate inward balance of $103 millions, exports totalling $2,838 millions and imports $2,941 millions. In the following twelve months her exports rose to $3,402 millions, but her imports were sharply curtailed in value as a result of the industrial recession, falling to $2,360 millions. The result was the enormous credit balance of trade of $1,042 millions. The strain caused by this distortion was felt virtually throughout the world, and helped to cause the depreciation of sterling and other currencies against the dollar in the latter half of 1938. The visible credit balance was not offset by a net debit on invisible account, but on the contrary was augmented by a net credit due to debt service and an import of capital.

Europe. The further and definitive depreciation of the French franc in May 1938 appeared to have its effect on France's balance of foreign trade. Although imports kept up to a high level—an average of 3,879 million francs a month in the first half of 1938 against an average of 3,525 millions in 1937—exports also expanded, to an average of 2,323 million francs against 1,995 millions. The net debit balance was thus little changed. The other former members of the gold bloc, as a group, also had a more favourable experience in regard to their trade balances. Switzerland's adverse balance of commodity trade fell from 351 million Swiss francs in the first six months of 1937 to 163 millions in the similar period of 1938. The Netherlands reduced an average adverse balance of 33 million gulden a month in 1937 to an average of 23 million gulden in the first six months of 1938. Belgium's trade balance was little changed. All these three countries suffered a decline in the value of their exports, but were able to offset it by paying less for imports. The experience of the Scandinavian countries was generally favourable. Denmark, who had incurred a total debit balance of 91 million kronor in 1937, almost exactly balanced exports against imports, on a slightly lower total of trade, in the first six months of 1938. Norway's monthly adverse balance, which had averaged 38·5 million kroner in 1937, fell slightly to 37·8 millions in the first six months of 1938, while Sweden's also fell from 17 million krone a month in 1937 to 15·2 million krone a month in the first half of 1938. Germany, on the other hand, had a less favourable experience in this matter. A credit balance of RM 445 millions in the whole of 1937 became a debit balance of RM 108 millions in the first half of 1938. The problem of the balance of trade was not eased for Germany by the absorption of Austria. In 1937, the latter incurred a net debit of 136 million schgs. on commodity trade account, and imports continued to exceed exports at roughly this rate (omitting trade with Germany) after the *Anschluss*. At the time of writing it was impossible to tell what effect the further absorption of the Sudeten German areas would have on the trade balance of the Greater Reich. Czechoslovakia herself, with an average credit balance of 83 million crowns per month in 1937, more than doubled this figure in the first half of 1938. A remarkable by-product of Germany's trade methods was a change in Yugoslavia's net balance of commodity trade from a credit of 400 million dinars in the first half of 1937 to a debit of 258 millions in the corresponding period of 1938; for Yugoslavia, doing a large proportion of her trade with Germany, attempted to liquidate the balances she had previously built up in her clearing account with that country. Italy's trade balance became more favourable. Having had an average monthly debit balance of about 300 million lire in 1937, she contrived to maintain her exports at practically the same level in the first six months of 1938, while reducing imports by nearly 200 million lire a month.

Other Countries. While some industrial creditor countries like the United Kingdom were incurring increased inward balances of trade, the experience of typical primary producing countries was also one of strain in 1938. The position of Argentina was specially striking. In the first six months of 1937 she had had a credit balance of 740 million pesos, as between exports and imports; in the first six months of 1938 this became a debit balance of 35 millions. Argentina needed a net credit of about 500 million pesos a year in order to pay for debt service and other invisible imports. Australia had a not dissimilar experience. On merchandise only she achieved a credit balance of £646,000 in the year ended June 1938, compared with a balance of £33,511,000 in 1936–37. Her gold exports, however, had increased from £14,580,000 to £16,544,000. There was no need to look farther for the explanation of

her loss of credit balance of trade than her trade with the United States, with which she had a credit balance of £2,033,000 in 1936–37 and a debit balance of £9,037,000 in 1937–38. New Zealand likewise could not make her exports keep pace with rising imports. Her credit balance of trade fell from £12,614,000 in 1936–37 (year ended March) to £6,943,000 in 1937–38. In the Far East, China's debit balance of trade fell from 30 million standard dollars a month in 1937 to little more than 20 millions a month in the first half of 1938. Japan's position was peculiar. In 1937 she had imported very large quantities of raw materials for the prosecution of the war in China and in anticipation of restrictive measures, whereas in 1938 her lack of means to pay obliged her to curtail her imports abnormally. Hence a debit balance of 618 million yen in the first half of 1937 fell to only 193 million yen in the same period of 1938. (H. V. H.)

BALEARIC ISLANDS. Minorca remained Republican; the other islands were still Nationalist. Majorca is still an important Nationalist-Italian air-base, and figured in all accounts of the heavy raids made on Barcelona and the Mediterranean coast generally, especially in January, February and August. When, on June 25, the Republicans decided to revoke their pledge to refrain from bombing Nationalist cities, Palma was mentioned as a chief objective; no such attacks, however, materialized. In a semi-official dispatch dated from Palma in August, and describing the Italian aerial attacks on Mediterranean towns, reference was made, apparently for the first time, to the "Legionary Aviation of the Balearics" (*The Times*, Aug. 15). Notable articles on the Balearics and the Civil War, by Professor J. Holland Rose, were published in the *Manchester Guardian* (March 19, Oct. 20). G. Bernanos, in *Les Grands Cimetières sous la lune* (Paris, 1938; translated as *A Diary of my times*, London, 1938), describes in detail, from the Republican standpoint, events alleged to have occurred in Majorca during the early part of the Civil War. (E. A. P.)



[Fox Photos]

POLLENZA, MAJORCA

This administrative province of Spain, consists of four large islands, Majorca (1,312 sq. m.), Minorca (278 sq. m.), Iviza (230 sq. m.), Formentera (35 sq. m.), and eleven smaller islands.

Area and Population:
Total Area 1,935 sq. miles
Population (est. Dec. 31, 1934) 376,735
Chief Towns: Palma (Majorca), Port Mahon (Minorca).
Language. Spanish (Catalan)
Religion. Roman Catholic

BALKAN ENTENTE. The Council of the Balkan Entente met at Ankara on Feb. 5–8. It agreed to adopt an attitude towards Italy on the Abyssinian question which accorded with the friendly feelings of the signatories towards Italy. It was hoped that Italy would accede to the Montreux Convention. The principle of non-intervention in Spain was upheld, although *de facto* contact with General Franco, to safeguard commercial interests, might be established.

The Entente subsequently officially welcomed the Anglo-Italian Agreement. A second, routine meeting was held at Geneva during the League Assembly; economic conferences in Istanbul (April), Athens (May), and Split (Sept.), a Press Conference in Istanbul (April); a meeting of Naval Staffs in Athens (July) and of General Staffs in Athens (Nov.).

The Greco-Turkish Treaty of April strengthened the Entente. More important still was the Salonica Agreement of July 31 with Bulgaria (*q.v.*), which did much to remove the anti-Bulgarian character of the Entente and to make it a genuine instrument of Balkan solidarity. (C. A. M.)

BALKAN LITERATURE. The 1938 literature of various countries of South-Eastern Europe is reviewed below.

Rumania. The most important event was the publication of the new "Carol II" Bible. Prominent among the poets were G. Gregorian; Aron Cotruș, whose *Horia*, *Țara* (the Land), and *Minerii* (the miners) deal with social and historical problems in a manner at once nationalist and revolutionary, the lyrical and mystic V. Voicilescu, and Emil Bota. The Rumanian novel favours large canvases and striking themes; thus C. Petrescu's *Mene, Tekel, Fares* begins a trilogy on the peasant revolution of 1907. D. Teodorescu's *Robul* (the Slave) is a satire on contemporary society.

Bulgaria. The leading poetess is E. Bagriana. A native of the Dobruja, she expresses in purely lyrical form the sufferings of her countrymen. Her latest works are *Reveillon*, *Human Heart*, and *The Express through the Desert*. Another important lyric poet is N. Liliev, while the veteran Cyril Christov represents an older generation. Narrative literature suffered a severe loss through the death in 1937 of J. Jovkov, Bulgaria's leading novelist. His latest work, *If they could Speak*, was a collection of short stories dealing with provincial life. His most prominent successors in the short story are Eline-Pelline, G. Raichev, G. P. Stamatov, and Svetoslav Minkov (*Alchemy of Love* and *A Canine Story*).

Albania. Literature is still sparse. The 25th anniversary of the national independence (Nov. 1937) was celebrated by the issue of Gjergj Fishta's definitive edition of the great national epic *Lahuta e Malcis* (The Lute of the Mountains), which celebrates the heroic struggle of the Albanians against the Turks. On the same occasion, the publication was begun of a series of volumes of folk-lore entitled *Visari Kombëtar* (National Treasure). In 1938 L. Paradeci, the leading Albanian poet of the younger generation, published a second volume of lyrics under the title *Yhhi i Zemers* (The Star of the Heart).



Lipnitzki

"ORIANE OU LE PRINCE D'AMOUR", PRODUCED BY SERGE LIFAR AT THE OPERA, PARIS

Greece. The unpublished poems of the famous national poet A. Valaoritis were posthumously collected and issued. S. Myrivilis' *To Tragoudi tis Gis* is a long prose-poem of philosophical and pacifist tone Other interesting works are Z. Papantoniou's *I Tmysia*, short stories by a master of psychology and style, A. Tertzakis' *I Memexedenia Politeia*, a novel on modern social life; N. Kazantzakis', *Taxidevontas*, impressions from both sides of the Spanish Civil War; A. Tarsouki's *Ta Aspra Nisia*, travel-impressions of the Aegean Islands; K. Politis' *Eroica*; K. Parasomos' *Deka Ellines Lyrikoi*, critical appreciations of modern writers; and P. Vlasto's *Paravlastara* (1937), in which the author traces the influence of Nietzschean philosophy on the ideology of the "demotike" in Greece.

Yugoslavia. Tin Ujović still carries on the tradition of the "Bohèmes". The most promising of the younger lyric poets is Rade Drajneć. Miroslav Krneža, whose principal theme is the transition between the old and the new generations of Yugoslavia, is the most important novelist and playwright; but Borivoj Yevtić, of the Sarajevo theatre, caused a sensation with his national-revolutionary drama centring upon the figure of Princip, the assassin of the Archduke. Three interesting writers of short stories and sketches are D. Vasić, who describes war, and V. Petrović and D. Drangić, who deal with provincial life in the Voivodina and Bosnia respectively.

(N. MA.)

BALLET. [The abbreviation *c.* signifies "choreography by."] Ballet retained its appeal in 1938, except in Italy, where various events combined temporarily to stifle it. The principal event of the year was Massine's secession from the De Basil company. This resulted in the formation of a new company, the Ballet Russe de Monte Carlo, with Massine as artistic director and *maître de ballet*, and including Danilova, Toumanova, Tarakanova, Guerard, Panaieff, and Youskevich, with the addition of Markova, N. Theilade, and F. Franklin. The De Basil Ballet acquired a new board of directors, with Fokine and Lichine as choreographers; its principal dancers were Baronova, Riabouchinska, Lichine, and Shabelevsky, with Nemtchinova as guest artist.

During the London season the Ballet Russe de Monte Carlo produced: *Gaîté Parisienne* (Offenbach), *Seventh Symphony* (Beethoven), *Nobilissima Visione* (Hindemith), all *c.* Massine. The first was a lively but inferior work in the style of *Beau Danube*; the second, a further essay, partially successful, in symphonic ballet, its second movement being the best; the last, based on the life of St Francis of Assisi, was notable for the religious fervour conveyed by Massine's dancing and for Theilade's rendering of Poverty. This company's revivals were *Giselle* with Lifar (guest artist) and, alternatively, Markova or Toumanova, Markova being particularly brilliant in the second act; *Beau Danube*, with new and indifferent costumes; and *Coppélia*, including the generally omitted third act. A minor sensation was provided by the first London production of Lifar's *Icare*, for which he composed both the choreography and the rhythms, the latter being arranged for percussion orchestra.

The De Basil company presented: *Protée* (Debussy), *c.* Lichine, a slight but attractive work, and *Cendrillon*, based on the story of Cinderella, *c.* Fokine, which lacked the distinction of *L'Épreuve d'Amour*.

The Vic-Wells Ballet produced four ballets only, owing to extensive rehearsals connected with a contemplated production of Tchaikovsky's masterpiece, *La Belle au Bois Dormant*. These were *Horoscope* (Lambert), *The Judgment of Paris* (Berkeley), and *Harlequin in the Street* (Couperin)—a revised version of the ballet prologue to



Lipnitzki

SERGE LIFAR IN "ORIANE"

Molière's *Le Misanthrope*, given in 1937 at the Arts Theatre, Cambridge, all *c.* F. Ashton; and *Le Roi Nu* (Francaix), *c.* N. de Valois. *Horoscope*, in the manner of a symphonic ballet, was the most interesting and revealed a dancer of promise in Michael Somes. *Le Roi Nu* (*Emperor's New Clothes*) marked a decline from the standard of *The Rake's Progress* and *Checkmate*. The Ballet Rambert produced several short ballets: *Valse Finale* (Ravel), *c.* W. Gore; *Croquis de Mercure* (Satie), *c.* A. Howard; *The Tartans* (Boyce), *La Péri* (Dukas), both *c.* F. Staff; also a new version of *Cross-gartered* (Frescobaldi), *c.* W. Toye. In the provinces, The Merion Welsh Ballet Society (Bala) showed a definite advance with *Birthday of the Infanta*, *c.* N. Brooking, and *Bramwen* and *Our Village*, both *c.* H. Johnson.

Companies visiting London were the Ballets Jooss—which produced nothing new, except that *The Seven Heroes* was given a new first act—and the Palestine Singing Ballet, which had a certain interest from the use of folk music and national costumes, though the dancing of six Yemenite girls forming the troupe was primitive in the extreme.

In Paris, Lifar produced at the Opera: *Oriane ou le Prince d'Amour* (F. Schmitt), *Le Cantique des Cantiques* (Honegger), and *Aeneas* (Roussel); the first being the most successful. At the Opéra Comique, C. Tcherkass presented *Suite Provençale* (Milhaud), an interesting ballet based on peasant life in the South of France. Another new company which attracted attention at the Ambassadeurs was the Ballets de la Jeunesse, with Egorova and Bartholin as choreographers, which gave *Visions Juveniles*, *Les Bronzées*, *Trois Images*, and *L'Amoureux et la Bien Aimée*. At Brussels, ballet at the Théâtre de la Monnaie continued to develop under L. Katchourovsky.

New productions of Soviet Ballet were *The Night before Christmas* (Assafiev), after Gogol, *c.* Varkovitsky, at Leningrad, and *The Caucasian Prisoner* (Assafiev), after Pushkin, given at Leningrad with *c.* Lavrovsky, and at Moscow with *c.* Zakharov. At Leningrad, Petipa's *Les Saisons* was revived by Ponomarev.

The Royal Hungarian Ballet (Budapest) presented *Iphigénie* (Gluck), *Salade* (Milhaud), and *Pozsonyi Majalis* (Rajter), all *c.* G. Harangozó, the Lithuanian Ballet (Kaunas) revived *Le Roman d'un Momie* (Tcherepnin); the Danish Ballet (Copenhagen) produced *The Circle* (Tchaikovsky), *c.* N. Therlade, the Yugoslavian Ballet (Belgrade) achieved considerable success with *The Devil in the Village* (Fran Lhotka). The Latvian Ballet (Riga) showed considerable activity under the leadership of dancer-choreographer, O. Lēmanis, who also produced *Autumn* (Kalniņš) and *The Nightingale and the Rose* (Kalniņš), the first was unusual in that it began and ended with choral singing, while ingenious costumes suggested trees with branches and leaves. (C. W. Be.)

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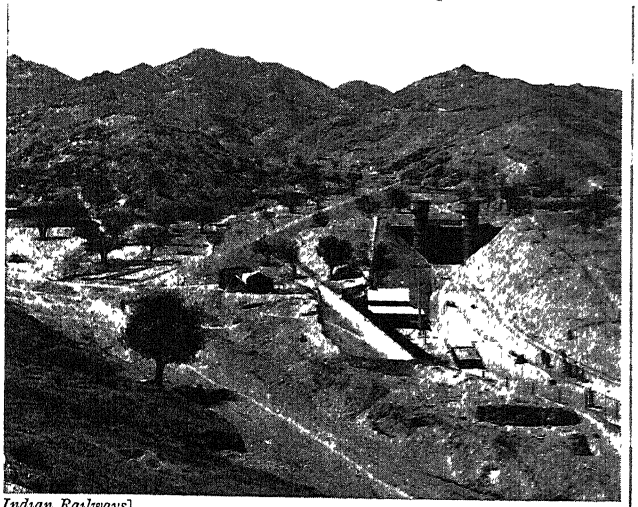
The United States continued in 1938 to develop the national ballet. Ballet Caravan, a company of twenty young dancers trained in the School of American Ballet, started on its first transcontinental tour in October, presenting new compositions on native themes, *Billy the Kid*, *Filling Station*, *Yankee Clipper*, and *Pocahontas*, and calling on American musicians and artists for scores and décors.

Catherine Littlefield's Philadelphia Ballet visited Chicago, Boris Romanoff, of Rome and the Royal Opera, stepped into the stewardship of New York's Metropolitan Opera Ballet, which George Balanchine, as head of the young American Ballet Company, had vacated in the spring. Bohm, Mordkin, Kosloff, among famous European artists, carried on resident and touring companies in the United States.

Ballet on ice and screen became increasingly popular. The Norwegian skater, Sonja Henie, starred in both media, and her compatriot, Vera Zorina, starred in a Technicolor sequence in *The Goldwyn Follies*, supported by an American ballet, under Balanchine.

Uday Shan-Kar, with his Hindu dancers and musicians, after performances in England and America, retired at the height of his success to establish a school of the dance and related arts in India.

BALUCHISTAN. About the size of Italy, Baluchistan lies on the Arabian Sea, wedged in between Persia, Afghanistan, and India. Part is a minor province of British India; the rest a congeries of States under the superintendence of an Agent to the Governor-General, who is also chief commissioner of the province. Sir Walter Parsons is the present official. The residents of British Baluchistan (area 54,228 sq. miles; pop. 463,508) are mostly Moslems, speaking Pushtu, but the Brahui tribes retain a language closely allied to the Dravidian tongues. The capital, Quetta, 5,500 ft. above sea-level, contains an important frontier cantonment, with the Indian Staff College; both city and cantonment are being rapidly reconstructed after the calamitous 1935 earthquake. The Agency includes Kalat, whose chief enjoys a subsidy of £19,000 a year (area 73,278



Indian Railways]

KHOJAK TUNNEL, BALUCHISTAN

sq. miles , pop. 342,101). The only other important State is Las Bela (7,132 sq miles ; pop. 63,008). (ME.)

BANK FOR INTERNATIONAL SETTLEMENTS. The activities of the bank have naturally been affected by the tension through which Europe has passed during the latter half of 1938. Thus the total of the balance sheet of the bank which, to a great extent, reflects the amount of currencies held by central banks, was reduced from 626·5 million gold Swiss francs at the end of August, to 576·6 millions at the end of September. Being a depository for central bank balances included in monetary reserves, the Bank for International Settlements maintains the highest form of liquidity ; moreover, in the various markets no difficulties of moving funds were experienced by the bank even at the height of the crisis. By December, the total of the balance sheet had risen again to over 600 millions, so that more than one-half of the decrease had by then been recovered.

When central banks hold gold in preference to currencies, they are necessarily compelled to exchange gold against currencies, and vice-versa, at frequent intervals. As a result, the Bank for International Settlements has seen a considerable increase in the volume of its current transactions, which have been maintained at a high level for a longer period than for several years past. Furthermore, the bank has continued to extend, via central banks, certain credit facilities for commercial purposes, and this particular kind of business has proved specially welcome in markets in which the possibilities of forward covering of exchange risks are not normally available.

The result of the business operations for the financial year ending March 31, 1938, differs little from that for the preceding year, net profits being 9,012,000 gold Swiss francs. A six per cent dividend in gold has again been distributed, and the usual allocation has been made to reserves, which on March 31, 1938, were 24·3 million gold Swiss francs as compared with a capital of 125 million gold Swiss francs.

At a time when the world's exchange markets are in a disturbed condition, the leaders of central banks have found it more than ever necessary to keep in close contact with each other ; the Bank for International Settlements has continued to serve as a centre of monetary contact and collaboration. The monthly meetings of its board have been most regularly attended by the members, the majority of whom are governors of central banks ; and in various ways relations have been maintained with central banks not represented on the Board.

BANKING. During 1938, the British banking system had to cope with two new developments : the first was the trade recession and fall in prices which, although arrested in May, 1938, has left both trade and prices at a lower level than they were in early 1937 ; the second was the outflow of funds from London, due first to the French repatriation of May, 1938, and second to the autumn international crisis and the aftermath of uncertainty which it left behind it.

When trade is expanding and prices are rising, the demand for bank advances automatically grows. In the absence of any enlargement of the credit base and augmentation of bank cash, growth ultimately reaches the point where the banks have to compensate for it by realizing their investments. These realizations in turn affect the security markets, causing the price of government securities to fall, and equally bringing about a rise in the long-term rate of interest. This actually happened in 1937. Between Nov. 1936 and Nov. 1937, the following movements took place.

(1) Clearing bank cash rose only from £233 to £235 millions.

(2) Clearing bank advances rose from £890 to £986 millions.

(3) Their investments fell from £656 to £634 millions.

(4) The price of 2½ per cent Consols fell from 85 to 75, and their yield rose from 2·94 to 3·33 per cent.

It is arguable that this increase in the long-term interest rate was one of the many causes of the 1937–38 recession. The trade recession reversed this trend. As the accompanying table shows, the demand for credit has eased and advances have fallen from £984 to £967 millions. Cash has remained unchanged at £234 millions, and so the banks have been able to increase their investments from £639 to £645 millions. Here, however, the contrast ceases, for there has been no improvement in security prices nor fall in the long-term interest rate.

The explanation of this must be sought in the second chief development of the year, namely, the outflow of funds, first to France, and later during the crisis to the United States and other foreign centres. The table shows that deposits have dropped from £2,312 to £2,256 millions, and then reflects the outflow of foreign funds. The immediate reaction of their outflow is easy to trace. To cover their outflow across the exchanges, the British Exchange Equalization Account (*see* EXCHANGE EQUALIZATION FUNDS AND GOLD MOVEMENTS) sold gold. The sterling received for this gold was re-invested in British Treasury bills, so that more bills came to be held by the Exchange Account and less by the banking system. Hence the counterpart to the reduction in the banks' deposits was not a loss of cash, but a contraction in their own bill portfolios and also in their loans against bills. The table shows how discounts have fallen from £296 to £268 millions, and their call and short loans from £165 to £148 millions.

In Oct. 1937, 10·1 per cent of the banks' deposits were covered by cash, and 70·2 per cent offset by investments and advances. A year later the corresponding ratios were 10·4 and 71·6 per cent. The latter ratio is probably now as high as bankers like it to get, for neither investments nor advances are so liquid an asset as bills of exchange or call and short loans. Thus, while the banks are now well enough supplied with cash, they cannot increase either their investments or advances by very much unless they can also

London Clearing Banks

(£ millions)

Bank	Deposits		Cash		Call and Short Loans		Discounts		Investments		Advances	
	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938
Barclays	426	427	43	45	25	23	53	62	106	99	198	198
Lloyds	404	391	40	41	31	26	52	50	114	110	167	163
Midland	498	477	52	51	27	21	85	65	114	130	216	209
National Provincial	311	308	31	32	18	20	40	31	86	84	137	141
Westminster	364	347	37	35	24	26	55	45	111	112	137	131
District	78	80	8	8	9	8	4	8	30	29	30	30
Martins	93	97	9	10	7	6	3	5	30	35	45	43
Williams Deacon's	37	38	4	4	6	6	1	1	12	12	14	15
Coutts	25	23	2	2	3	2	1	1	9	8	11	11
Glyn, Mills	40	32	4	3	10	7	—	1	12	11	13	9
National	37	36	3	3	5	3	1	1	14	14	17	17
Total	2,312	2,256	234	234	165	148	296	268	639	645	984	967

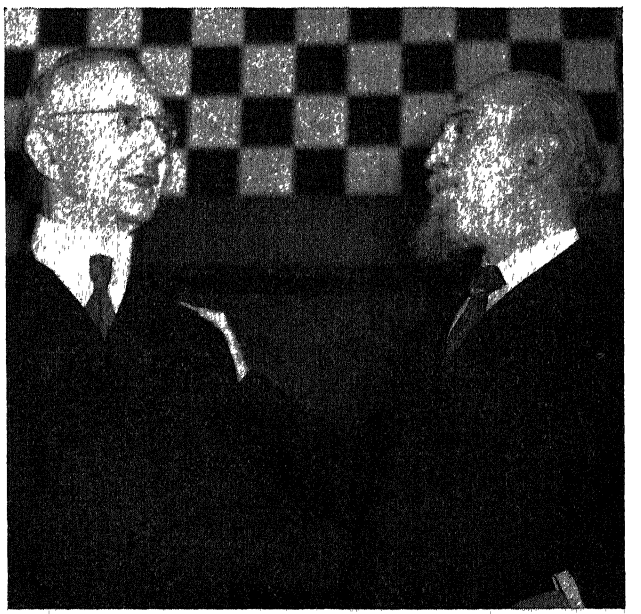
obtain more bills. In this respect the outflow of foreign funds and the consequent reduction in the quantity of bills available to the banks has weakened their ability to lend or invest. Also the outflow of funds and still more the nervousness which caused it weakened security prices. That is why the limited increase in the banks' investments did not lead to a recovery in the stock markets.

Canada. Until the middle of 1938, conditions were affected by the recession in the United States. The Bank of Canada continued its cheap money policy. As a result of this, the chartered banks' balances at the Bank of Canada rose during the year ended Nov. 9, 1938, from $209 millions to $222 millions. The Bank of Canada maintained its gold reserve at $180 millions. Possibly because of the autumn, 1938, recovery, the note circulation rose during these twelve months from $160 millions to $176 millions. The chartered banks did not fare too badly. Deposits in Canada rose from $2,430 to $2,484 millions during the twelve months to June 1938, while investments increased from $1,442 to $1,462 millions, and advances from $728 to $786 millions. There was also an improvement in profits, but these are still much lower than during the decade following the war. New industries in Canada, such as mining, need less bank credit than agriculture, while the chartered banks have lost some income from the gradual transfer of their note issues to the Bank of Canada. They have, however, during recent years been able to economize through the closing of unremunerative branches.

Early in 1938 the Dominion government acquired all the private share holdings in the Bank of Canada, which is now entirely a government-owned central bank.

India. Banking in India was also influenced by the recession, the most important symptom being the deterioration in India's external trade balance. This forced the Indian Reserve Bank to draw heavily on the sterling balances, which fell from Rs. 96 millions to a mere Rs. 29 millions during the year to Oct. 29, 1938. In April 1938, the deterioration in the trade balance affected the exchange. The Reserve Bank had to abandon its minimum buying rate of 1*s.* 6$\frac{1}{8}$*d.* for sterling, and let the rate down to 1*s.* 5$\frac{25}{32}$*d.* The autumn saw a slight recovery to 1*s.* 5$\frac{15}{16}$*d.* The internal banking position on the whole remained satisfactory. The banks had sufficient cash available for the financing of seasonal requirements, while the advances and discount of the scheduled banks were well maintained. Banking profits also kept up well, in spite of the low level of money rates. The chief banking problem of assimilating the mass of indigenous bankers and making credit cheap throughout the country instead of only in the larger centres, still awaits solution, and many indigenous bankers are slow to avail themselves of the Reserve Bank's facilities.

Australia. The leading banks were faced during 1938 with problems arising out of the contraction in Australia's export surplus and the drought over many parts of the country. The falling-off in exports made inroads into the banks' London funds which form part of their cash. So far these inroads have not been serious, but there is a likelihood of a further erosion next year. Meanwhile, the drought has added to the demands for credit. The net result has been some decline in the trading banks' aggregate cash ratio and an increase in these rates of advances to deposits. By the June quarter of 1938 the former had fallen to 10·5 per cent (against 12·7 per cent a year before) while the latter had risen to 88·98 per cent (against 83·3 per cent). The opinion has been expressed that the banks are already having to exercise greater discrimination in their advances, and that next year it will, in the absence of an enlargement



Associated Press]

DR. SCHACHT AND MR. MONTAGU NORMAN, DEC. 15, 1938

of the credit base, become even more difficult to meet legitimate credit needs.

South Africa. In spite of the recession the commercial banks well maintained their strength. Advances contracted slightly during 1938, but deposits and investments increased. There was no sign of any stringency and no need to restrict credit in any way. By the end of the year imports were beginning to decline, which decreases the risk of the general recession affecting the banks' reserves to any serious extent.

Europe. Banking has been affected both by the trade recession and also by the heavy international movements of funds due to the political apprehensions of the year. There was some expansion in French bank deposits, particularly at the time of the May repatriation movement. The Bank of France has maintained its gold reserves almost intact, and indeed their revaluation in November raised them from Frs. 55,808 to Frs. 87,264 millions. Sufficient information is not yet available to see how the French banking system was affected by the autumn movements of funds due to the crisis, but the crisis itself caused a sharp increase in the note circulation due both to government emergency expenditure and borrowing, and the rediscounting at the Bank of France. As expansion in the note circulation was indeed an experience common to most European countries during the crisis, Holland was one of the countries to experience an influx of funds, the Netherlands Bank's reserve rising by about Fl. 60 millions during the year. The Belgian National Bank transformed part of its foreign exchange holdings into gold, but lost slightly on balance. Conditions in Belgium varied considerably during the year, being influenced by occasional reports that the belga would have to be devalued. The Scandinavian central banks all became stronger during the year. In Denmark the trade balance improved sufficiently to enable the authorities to augment their foreign exchange holdings. In Central Europe the alteration of frontiers created numerous banking problems. In Germany the attempt was made to get rid of concealed borrowing by means of the issue of bills rediscountable at the Reichsbank. Instead "delivery bills" were issued to contractors and others, and these were not freely rediscountable. One of the motives, doubtless, was to force the commercial banks to pay greater heed to their own cash reserves, but the main consequence was a partial immobilization of the working capital of many industrial firms. This was one cause of the August slump on the Berlin Bourse. Nevertheless, both the note circulation and the Reichsbank's bill portfolio increased substantially during the year. The increased needs of rearmament apparently were too much for the desire to rely solely upon taxation and disclosed borrowing. The new attempts to develop trade between Germany and South-east Europe, in some respects equivalent to the creation of a "Reichsmark area", have also called for numerous banking moves. (N. E. C.)

United States. The number of banks was only slightly reduced by failures, liquidations, or consolidations from 15,393 on Dec. 31, 1937, to 15,287 on the latest date for which figures were available at the end of 1938. Of this number, 563 represent mutual savings banks, which showed no change in total number during the period. The number of the above banks which are members of the Federal Deposit Insurance Corporation decreased from 13,795 to 13,723 and their total assets increased from $54,221,369,000 to $54,364,953,000 in the same period.

To counterbalance the contraction in excess reserve balances extending from 1937 into the early part of 1938, the U.S. Treasury released inactive gold on April 14 to the extent of $1,392,000,000 and the Federal Reserve Board reduced reserve requirements so as to increase excess reserves by $750,000,000. After reaching a maximum of about $3,500,000,000, excess reserves stood at $3,070,000,000 on Dec. 28, 1938. (*See* also FEDERAL RESERVE SYSTEM.) As a consequence of these measures, of large imports of gold, and of the expenditure of Treasury balances with the Reserve banks, there was an increase in excess of $2,000,000,000 in bank deposits which was, however, accompanied by a further decline in the turnover of deposits. The volume of both demand and time deposits neared the all-time peak while the ratio of the amount of cheques drawn against deposits over a period to the average volume of deposits during the same period reached the lowest point on record, reflecting the lower level of security market and general business activity as well as the large volume of idle funds awaiting profitable use.

While loans and investments declined during the first half of the year and increased thereafter, there was little net change for the year as a whole. Commercial loans declined about 20 per cent and loans to brokers and dealers in securities declined about 40 per cent. On the other hand, holdings of government direct and guaranteed obligations increased by about 7 per cent and other securities about 10 per cent. An unprecedented volume of cash resources in excess of $10,000,000,000 remained in the hands of reporting member banks.

Bank earnings suffered from the replacement of commercial loans by government securities, lower interest rates, and the large amount of funds uninvested yet subject to the $\frac{1}{12}$ per cent contribution to the Federal Deposit Insurance Corporation. Earnings from current operations were 10 to 15 per cent less, while profits derived from the sale of securities were larger. Current expenses showed a decline, reflecting efforts to economize to meet reduced income. Banks continued to increase receipts from service charges on deposit accounts, and more attention was given to the earning possibilities of other services, including trust and agency departments. Personal loans, and the financing of automobile and other purchases grew in volume, particularly on the Pacific coast.

In June there was an announcement of liberalized rules governing bond purchases by member banks of the Federal Reserve System. In addition to such securities as had been previously authorized, member banks may henceforth purchase investment securities of sound value issued by established businesses that can demonstrate the ability to service such securities, without requiring that the securities be offered for public distribution or be readily marketable, provided that they mature not later than ten years and 75 per cent of the principal be amortized by maturity through substantial periodic payments. Other changes will encourage banks to place more emphasis on intrinsic value than on liquidity or early maturity. Uniform bank examination practices were for the first time agreed upon by the three Federal examining agencies, the Federal Reserve Board, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation, and co-operation is expected from the National Association of Supervisors of State Banks.

Branch banking *v.* unit banking was again to the fore in the annual convention of the American Bankers Association. The election of a vice-president, who will be president in 1940 by traditional rotation, was made the battle-

ground between the group supporting in some degree branch banking and other developments to meet changing economic conditions, and the group of militant individualists typical of the early history of American banking. The former group elected their candidate, indicating to some extent a recognition of new forces in the field of banking.

Suggestions were current for various plans to discourage interbank deposits, the most recent being a proposal to require the member banks to maintain with the Federal Reserve Banks a 100 per cent reserve against deposits of other banks. Such action would tend to add to Federal control of the banking system and would raise serious problems affecting both the large city banks where such deposits are now held in large volume, and the country banks which maintain balances with correspondents in the large cities for convenience in making transfers and in return for other valuable services of a less tangible nature. (*See* also BUSINESS CYCLES; EXCHANGE RATES; FINANCIAL REVIEW; SAVINGS BANKS.) (E. B. L.)

BANK OF ENGLAND. During 1938, the Bank of England had to manage on behalf of the government the monetary affairs of the nation under conditions of trade recession and intermittent crisis. More precisely it had to maintain the official policy of cheap and plentiful credit, and at the same time cope with the special problems which from time to time arose. To appreciate its task, it must be remembered that the effective determinant of the supply of credit is the volume of bankers' deposits in the banking department—*i.e.* the cash held by the commercial banks on deposit at the Bank of England. The size of bankers' deposits is in practice governed by the total resources of the banking department less those deposits held by various government departments and known as public deposits.

The first task of the Bank was to keep its "total resources" constant. As the table shows, it did so, at a level of just under £180 millions. The procedure was to counteract any variation in the Reserve (due in turn to variations in the note circulation) by expanding or contracting the banking department's holdings of government securities. Public deposits were less susceptible to control, and were liable to undergo sudden expansions at a time when the Exchange Equalization Account (*see* EXCHANGE EQUALIZATION FUNDS AND GOLD MOVEMENTS) was selling gold heavily and receiving sterling in exchange. On these occasions the Bank had to re-invest the Accounts cash in Treasury bills, many of which were bought in the open market. But this process often required a few weeks' time, and in the interim public deposits ran high, while bankers' deposits ran low.

This happened in May, as the result of the sudden repatriation of funds from England to France. The table shows how public deposits jumped up from £10·7 to £36·6 millions in a single week. Purchase of bills eased the position, but the *status quo* was not finally restored until the depletion of public deposits in early June as the result of the War Loan dividend payment.

The September crisis provided a prolonged period of strain. First there was the Exchange Accounts heavy gold cover, which as in May inflated public deposits. The peak here was reached on Sept. 7, for from then onwards official purchases of bills began to catch up with the gold sales. But a new problem arose at the end of the month with the crisis expansion in the note circulation. This was due to a variety of causes, including emergency spending by the government and the public and also the desire of the commercial banks to reinforce their local currency reserves.

Bank of England

(£ millions)

	Dec. 22	May 4	May 11	June 8	Aug 3	Sept 7	Oct 5	Dec. 21
Gold	326 4	326 4	326·4	320·4	326 4	326·4	326·4	326 4
Fiduciary Note Issue	220 0	200·0	200·0	200·0	200·0	200 0	200 0	230 0
Note Circulation	509·3	490·3	482·2	490·7	497 8	480·1	505 8	503 0
Reserve	38·0	36·7	45·0	36 5	29·7	47·7	22·0	54·3
Government Securities*	96·5	117·8	105·7	111·4	114·7	101·3	121·9	72·1
Total Resources*	163·4	181·9	177·7	176·1	175·8	176 5	176·5	166·1
Public Deposits	10·8	10·7	36 6	11·7	9·5	32·2	12·1	12·5
Bankers' Deposits	98 2	117·5	87 9	111·1	113·4	91·3	109·7	98·3

* In banking department only

To meet their expansion and the consequent drop in the Reserve, the Bank of England bought bills on its own account, and so maintained its "total resources" at their customary level.

October and November witnessed further intermittent flights of funds to New York and gold sales by the Exchange Accounts. Public deposits, therefore, were again inclined to run high, while bankers' deposits were on the low side. The process of rectification by means of bill acquisitions on behalf of the Exchange Account had to be continued. At this time, too, the Bank had to carry out the duty of granting the £10 millions credit to the Czech government, it being understood that the Bank was to be reimbursed out of public funds so soon as the necessary legislation was passed. In consequence the Bank return of Nov. 5 showed an increase of £6 millions in discounts and advances, representing drawings against that credit.

Bank rate remained unchanged at 2 per cent during the year, and except during the crisis week of September, short money and discount rates remained very low. This shows that, in spite of the year's anxieties and disturbances, the Bank of England successfully maintained the government's policy of cheap and plentiful credit.

Early in 1939 the Bank sold £200 millions of gold to the Exchange Equalization Account, in order to reinforce the latter's resources. In consequence the fiduciary note issue was raised to £400 millions. (N. E. C.)

BANK OF FRANCE. During 1938 the Bank of France was charged with two familiar duties. The first was that of meeting the needs of a depleted Treasury, under conditions which, with one or two exceptions, precluded any borrowing in the Paris markets. The second was that of maintaining some degree of stability for France's internal and external monetary affairs. Up to April 14, when M. Daladier assumed office, both these duties weighed particularly heavily upon the Bank. The limit of permissible government borrowing had to be extended, and the total of "provisional" loans rose from Frs. 31·9 to Frs. 40·1 milliards. Meanwhile, the French Exchange Fund was losing gold in defence of the franc, and in February it had to take back from the Bank of France the Frs. 3,000 millions of gold it had transferred to it only the previous November. These and other movements are shown in the table.

The creation of the "Daladier" franc (at Frs. 179 to £1) in early May caused a sudden repatriation of capital to France. This replenished the Exchange Fund's gold, while the improvement in the atmosphere permitted of the flotation of a Defence Loan of Frs. 5,000 millions. Thus the

Bank of France Returns

(Frs milliards, i e thousand millions)

	Dec 30, 1937	Feb 3, 1938	Apr 14, 1938	Sept 1, 1938	Sept. 29, 1938	Nov 10, 1938	Nov 17, 1938
Gold	58 9	55 8	55 8	55 8	55 8	55·8	87·3
Discounts	10 7	12 3	11·2	8 4	22 2	14 2	13 5
Loans on Securities	3 8	4 0	3 7	3·7	4·4	4 0	4 0
30-Day Advances	0 7	1 2	0 9	0·8	1 3	2·3	2·1
Loans to State							
(*a*) Permanent .	3 2	3·2	3·2	3 2	3·2	3·2	10·0
(*b*) Provisional	31 9	31·9	40·1	40 1	50·1	48 1	20·6
Note Circulation .	93 8	93 4	98·1	101·8	124·4	108·8	107·3
Public Deposits .	3 5	2 5	2 2	2 5	2 8	3·5	6·2
Private Deposits	19 2	19·5	21·5	15·8	18 4	23·3	31·5
Ratio of gold to sight liabilities (%)	50·5	48 3	45·8	46·4	38·3	41·1	60·1

Bank of France had a relatively easy time until the September crisis The nervousness of that month, however, had two consequences to the Bank, apart from the fresh efflux of capital and gold which affected the Exchange Fund. First there was a general desire to hoard currency, and also some increase in the public's expenditure as the result of the emergency. This led to the expansion from Frs. 101·8 to Frs. 124·4 milliards in the note circulation, and also to heavy rediscounting at the Bank. Next the Treasury had to borrow afresh in order to cover its emergency expenditure, and so provisional loans rose to Frs. 50·1 milliards

After the crisis there was some amelioration, as is shown by the drop in discounts, provisional loans, and the note circulation. Meanwhile the creation of the Daladier franc in May had not so far been accompanied by a revaluation of the Bank of France's gold. This was effected in November, as part of M. Reynaud's financial programme. Briefly the Bank's gold was revalued from a basis of 43 milligrammes to one of 27·5 milligrammes of gold, nine-tenths fine, per franc. This wrote it up from Frs. 55·8 to Frs. 87·3 milliards. The profit from this revaluation was allocated to the redemption of the Bank's provisional loans to the Treasury, the Treasury simultaneously borrowing up to the remaining margin of its powers. The Bank's permanent loan to the Treasury was also raised to Frs. 10 milliards. This gave the Treasury about Frs. 11 milliards of new money, to carry it over the next few months and part of this money was lodged in the Treasury's own account (public deposits in the table) and the remainder in various government funds, which rank as private deposits. The recovery in confidence and the repatriation of capital which followed the new financial and economic programme gave the Bank a far easier passage during the closing weeks of the year. (N. E. C.)

BANKRUPTCY. The year 1938 witnessed a considerable recession in both the export and internal trades of Great Britain as compared with 1937.

In consequence of this set-back in the volume of industrial activity, taken in conjunction with foreign political unrest, an increase in the number of failures during the year might have been expected, more particularly as statistics of total failures for each year from 1913 to 1937 tend to show an increase during periods of reduced activity, good examples being the years 1923, 1924, and 1931, when in each case the total failures for the year rose to over 8,000.

The total number of bankruptcies for 1938 fortunately does not reflect such an increase, though certain areas, notably connected with export trade, do, however, register a set-back. Currency and other trade restrictions have no doubt influenced the volume of trade in these areas, and thereby accentuated the number of failures. Examples of these are Yorkshire and the woollen district, where the number of failures in the wholesale section increased from 21 in 1937 to 32 in 1938, and the hardware districts of Birmingham and Sheffield, where there was an increase of nine over 1937 to a total of 31.

The total failures in the United Kingdom and Ireland during 1938 amounted to 5,550 as compared with 5,579 for 1937, an improvement of 0·52 per cent. Of this total 2,113 were under deeds of arrangement.

The largest number of failures occurred in the following occupations:

1. Builders 511
2. Grocers and Provision Dealers . . 442
3. Farmers 325
4. Drapers and Hosiers 228
5. Private Persons 228
6. Wireless Dealers 170
7. Plumbers, Painters, and Gas Fitters . 168

whilst the distribution of failures according to trade or profession was as follows:

	Bankruptcies	Deeds of Arrangement	Total	Per cent
Wholesale .	216	225	441	7·9
Professional .	434	74	508	9·2
Retail . .	2,787	1,814	4,601	82·9
	3,437	2,113	5,550	100·0

In view of the large concentration of population in the area, the failures in the wholesale trades were predominantly in the London district. This area accounted for 44·7 per cent of the total failures in this category as compared with 47·5 per cent in 1937.

Amongst the businesses in which there were no failures during 1938 may be noted in particular Bankers, Brewers, Cement Manufacturers, Corn Millers, and Sugar Refiners. (C. P.)

United States. The year 1938 was made eventful by the first comprehensive revision of the Bankruptcy Act since its passage in 1898. This was accomplished in the enactment by the 75th Congress of the so-called Chandler Bill (H.R. 8046), approved by the President on June 22.

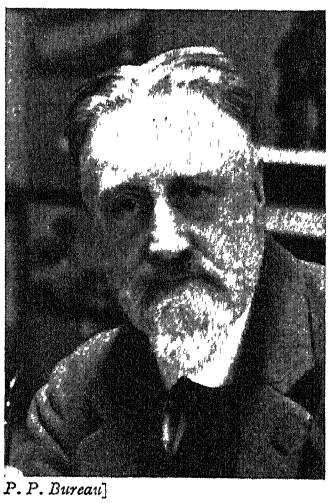
Quantitatively the larger part of the amendatory Act is addressed to refinements in arrangement and phraseology, clarification and increase in definitions, and the resolution of statutory and decisional inconsistencies. Of a more substantive nature are the new sections relating to partnership and stockbroker bankruptcies, priorities, and preferences. The Act now encompasses limited partnerships, and joint petitions are permissible by or against a partnership and one or more of the partners. In stockbroker bankruptcies greater equality in the distribution of assets is approximated by legislative restriction upon priorities hitherto permissible under *Richardson* v. *Shaw*, 209 U.S. 365.

In its procedural aspects the amendatory Act enlarges the summary jurisdiction of courts; relaxes the conditions upon which receivers may be appointed and removed, and increases their powers; and makes clear the subordinate role of ancillary proceedings. The administration of estates

is otherwise improved by provisions for pre-trial examination of bankrupts and for discovery, interrogatories, and production of documents. References may now be made before as well as after adjudication to referees, who may exercise, with rare exceptions, all the powers given to the "court", and are newly endowed with powers to grant, deny, or revoke discharges, and to confirm or set aside arrangements and wage-earner plans. A further noteworthy change in bankruptcy procedure is to be found in the newly-simplified provisions establishing appeals as of right where $500 or more is involved.

Perhaps the major contribution of the new Act is its thorough-going revision, in Chapter X, of the former Section 77B dealing with corporate reorganizations. The new chapter provides a number of fundamental improvements directed in the main to increased protection of public investors in re-organization cases.

BANTOCK, SIR GRANVILLE (1868–), British musical composer, was born in London and after training for the Indian civil service, later for chemical engineering, finally took up music at the age of twenty and entered the Royal Academy of Music. His voyage round the world six years later as conductor of George Edwardes' Gaiety company helped to stimulate that interest in Oriental and pagan music which has influenced a great deal of his work, though English, Scottish, and Irish folk-songs formed the groundwork of many of his later compositions. His belief that music should express some phase of human feeling prevented him from being drawn into any of the extreme modernist schools that merely experiment in acoustics for their own sake, and he developed instead an original, somewhat cosmopolitan style of his own, excelling chiefly in orchestral colouring, which has earned him a place in the front rank of British composers. Knighted in 1930, he left Birmingham University in 1934 as emeritus professor and is now chairman of the Trinity College of Music. His best orchestral work appears in *Omar Khayyám*, the *Hebridean Symphony* and *The Great God Pan*. Among his more recent works are *Prometheus Unbound*, *Pagan Symphony*, and *King Solomon* (commemorating the coronation of George VI); and in July 1938 was heard for the first time, in Liverpool, his music for a children's play, *Fairy Gold*, dealing with the Druids of Wales. Further details of his early career, and an appreciation, may be found in the *Ency. Brit.*, vol. 3, p. 79.



P. P. Bureau]
SIR GRANVILLE BANTOCK

BAPTIST CHURCH, THE. In the British Isles the aggregate membership of the Baptist Churches in 1938 was returned as 392,538, with 3,224 churches and a total seating accommodation of 1,439,687. This shows a decrease of 3,996 members, but an increase of 22 churches. Sunday Schools have 401,906 scholars. Scotland, Wales, and Ireland all have their own national Unions which work in close and friendly relations with the largest body, the Baptist Union of Great Britain and Ireland (president, the Rev. F. J. H. Humphrey, D.S.O.; general secretary, the Rev. M. E. Aubrey, C.H.). The annual assembly was held in London in April 1937, when the Rev. P. T. Thomson was elected president for 1939–40.

The Forward Movement inaugurated by the Union is successfully achieving its purpose of raising a million pounds to be spent in ten years on new buildings in recently developed residential areas to which one-quarter of the population has migrated since the War. Notable in the work of the Union is its increasing organization of women through the Baptist Women's League with its more than 700 branches, and of young people who maintain close contacts with Baptist youth on the Continent of Europe and in America.

British Baptists, in common with other Churches, are affected by the general unsettlement of life and thought, but are steadily and confidently adjusting themselves to the new conditions. They are linked to their fellow Baptists throughout the world, a steadily growing community, through the Baptist World Alliance which serves some twelve million communicant members and from thirty to forty million adherents in 72 countries.

In the Empire Baptists have made gratifying progress, and their membership, outside the British Isles, has reached 343,833. In 1938 in Jamaica they celebrated the centenary of the liberation of the slaves, in which Baptist missionaries played a large part, and in South Australia that of the beginnings of Baptist work in that land. In the East an All-India and Ceylon Baptist Union (including Burma) was formed, and it will be inaugurated formally early in 1939.

Foreign Missions. The Baptist Missionary Society (founded by William Carey, 1792) has 425 European missionaries working in India, Ceylon, China, Africa, and Jamaica. Its highest record of baptisms last year was in Congo, where the mission has extended rapidly. Its educational work at Serampore, Bengal, and at Tsinanfu, North China, is of university standard, and it does a large medical work. Two new hospitals are now being built. It maintains its early tradition through its linguists, translators, and writers of vernacular literature in all its fields. The expenditure last year was £169,700, with a deficiency of £17,778. (M. E. A.)

United States. The Baptists of America, totalling 10,370,980 members, are divided into two main bodies: the first, three groups with 9,860,290 members; the second, fifteen miscellaneous groups with 510,690 members. In the first division the Southern Convention has 24,844 churches and 4,595,602 members; the National (coloured) 24,000 churches and 3,796,645 members; the Northern 7,603 churches and 1,468,043 members.

Each Convention took action respecting certain social problems, both affirming their belief in democracy. Through its Social Service Commission the Southern condemned "all violence on the part of labour or capital", commended the action of various states to regulate child labour, but criticized the proposed Child Labour amendment to the Constitution.

The Northern Convention supported all pacific means for settling international disputes and opposed competition in armaments. Both Conventions urged the complete separation of church and state.

Both Conventions also appointed representatives for the Utrecht Provisional Conference of 1938.

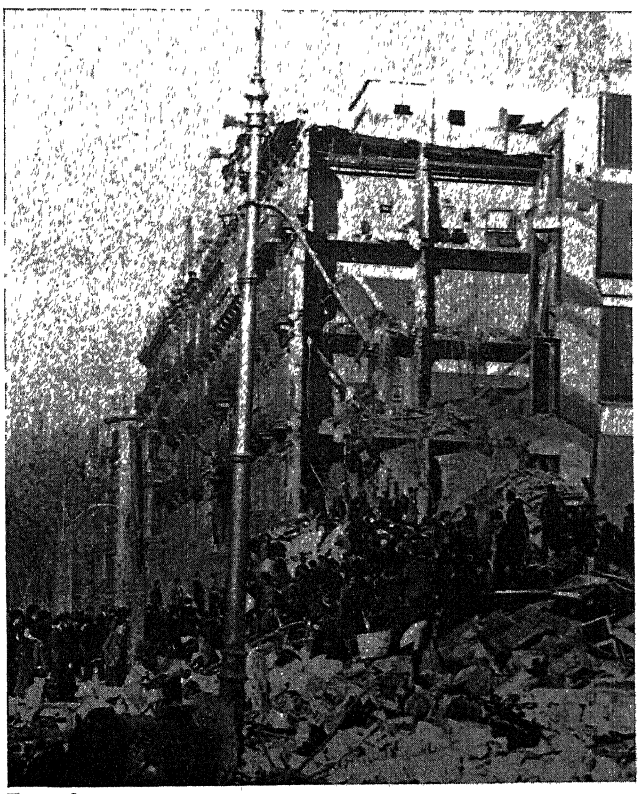
BARBADOS. Sir Mark Young left in March 1938 and was succeeded as Governor by Mr. E. J. Waddington in August. The new Colonial Secretary, Major Flinn, arrived in September. A record area of 15,097 acres of cane was reaped. An expedition to Brazil was authorized to collect the Amazon Fly as a parasite to control the cane moth borer.

To supplement the staple crops of sugar and cotton, the Department of Agriculture gave much attention during the year to the development of minor crops, including fruits and arrowroot. Exceptional rainfall in November culminated in destructive landslides in the hilly parishes.

The Royal Dutch Airline made successful reconnaissance flights for a new mail service connecting the Colony with Trinidad, Aruba, and Curaçao. The annually increasing population, with present density of 1,114 per square mile, led to an emigration scheme, 700 labourers being settled in St. Lucia. Provision was made for erecting 28 elementary schools and improving the Lodge School. Following the Disturbances Commission's Report, a Labour Officer was appointed and a Minimum Wages Act was passed. (A. A.)

Area and Population :
Area 166 sq. miles.
Population (Dec. 31, 1936) 188,294.
Chief Town, Bridgetown (pop. 54,234).
Governor. E. J. Waddington, C.M.G.
Production. Sugar (1936), 129,256 tons.
Overseas Trade 1937 :
Imports, £2,220,650.
Exports, £1,646,709 (domestic £1,498,341).
Communications :
Roads, 538 miles open (268 miles main roads).
Railways, Government, 20 miles.
Finance :
Revenue (1937–38), £508,526 , Expenditure, £458,461.
Public Debt (March 31, 1937), £442,220.
Education. Elementary, 26,113 scholars ; secondary, 1,216 scholars.

BARCELONA. The city remained during 1938 the headquarters of the Spanish republican government, though preparations were made for removing the administrative centre to Valencia in the event of the insurgent forces' appearing likely to capture Barcelona. It has been subjected to constant bombing raids by Gen. Franco's air forces, particularly in January, March, October, and November. It was officially announced in February that, as the result of a year of aerial attacks, 925 persons had been killed in the city and 2,349 injured, while 900 houses had been damaged or destroyed ; on March 16–18, a series of raids carried out on the centre of the city caused over 800 deaths and 2,200 serious injuries The city's defences were thereafter considerably improved, and by November it was estimated that 2,000 bomb-proof shelters were available, giving protection to about 600,000 persons—about one-third of its population, which by then had swollen to nearly two millions On April 7 the insurgent forces captured the hydro-electric station at Tremp, which supplied most of the electric power for Barcelona's lighting, transport, and industry. The tube railway was much utilized as an air-raid shelter, some families attempting to camp permanently therein. As a preventive measure against typhus, dogs were prohibited from appearing in the streets, even if muzzled.



Keystone]
SEARCHERS WORKING TO RECOVER BODIES FROM THE DEBRIS AFTER THE AIR-RAIDS OF MARCH 16, 17, AND 18 OVER BARCELONA

BARLEY : *see* GRAIN CROPS.

BARODA is a Mahratta State in Western India, its territory of 8,164 sq. miles being much intermingled with British districts. M. R. Sir Sayaji Rao Gaekwar rules over it and its dependencies, the total population being 2,443,007. Baroda has always claimed to be one of the most progressive of the Indian States, especially in education. Its capital, Baroda (population 112,860), is well laid out, with imposing buildings—college, museum, and market-place. The British Resident (Col. E. J. D. Colvin) is also agent to the Governor-General for a group of adjoining Gujerat States (7,541 sq. miles, pop. 1,272,168), of which Cambay and Rajpipla are probably best known. (ME.)

BASEBALL. The early part of the year 1938 saw the formation of the International Baseball Federation, of which England and some twenty other nations are members.

After several months of earnest preparation the season in Britain opened on May 1 with a great fillip, and the enthusiasm in all parts of the country was unprecedented. In all some 750 teams took to the Diamond with real interest and enthusiasm.

With the great increase of teams new leagues were formed and existing leagues formed additional divisions, while the attendances at games were greatly increased, and several clubs were obliged to find larger grounds to accommodate their supporters.

The outstanding event in Britain was the promotion of a series of test games, England *v.* America, by the International Federation. During August an American Amateur Team selected from thirty-four states of America visited the country for the purpose, and five test games were played at Liverpool, Hull, Halifax, Rochdale, and Leeds, which resulted in a win for England, by four games to one. Earlier in the season a representative team of the U.S. navy toured the country, playing games as far afield as Yorkshire and Liverpool, and again much interest was aroused by this visit.

An exciting challenge game, Lancashire *v.* Yorkshire, was the subject of a running commentary by the B.B.C. on August Bank Holiday, when after playing twelve innings (the maximum in Britain) the result was a draw.

The Royal Air Force played no mean part in extending the popularity of the game, and several stations in all parts of the country adopted baseball, in addition to the many stations who had been playing during 1936 and 1937.

Sports, social, and factory clubs took to the game in real earnest, and it is reported from all areas that the season concluded very successfully. In addition to the league competitions, numerous entries were received for the

National Challenge Cup Competition, and the various District Challenge Cup Competitions

Popularity of the game with scout troops, schools, and boys' clubs rapidly increased, and some 200 applications for entry to the National Juvenile Trophy Competition were received. This was a new competition promoted for junior teams whose players were seventeen years of age and under. Several junior leagues were formed to accommodate these teams.

A league for women, with a membership of eight teams, was very successfully promoted in Hull, and numerous other women's teams were to be found dotted about Britain.

Indoor schools were promoted and held in most areas for the training of players and umpires.

Thus British baseball, under the control of the National Baseball Association, concluded in September its most successful season.

In the United States the world's championship was won by New York Yankees (winners of the American League), who beat Chicago Cubs (winners of the National League) by 4—0. Kansas City won the Little World Series, and the Eastern Inter-collegiate League finished with Dartmouth at its head. (G. K. E.)

BASUTOLAND. The territory, which is legally a British Colony, is administered by a resident Commissioner under the High Commissioner for South Africa Since 1903, a National Council replaced the traditional "pitso", or tribal gathering, for the purposes of discussing domestic affairs. The chief problem is the improvement of agriculture and animal husbandry. Anti-erosion measures are financed from a loan of £160,233 from the Colonial Development Fund, and a detailed geological survey is financed from the same source. Nearly 50,000 natives leave the territory annually to work in the Union, and as many as fifty per cent of adult males are away from the territory at one time. In the political field the question of transfer to the Union arouses keen interest both within the territory and elsewhere. In March 1938, Mr. MacDonald announced that an agreement had been reached between the Imperial Government and the Union to constitute a joint advisory conference to study openings for co-operation. The Union has also agreed to prepare memoranda setting forth the terms on which transfer might take place. (J. L. K.)

Area and Population :
Area 11,716 sq. miles.
Population (1936 Census): Whites, 1,434; Coloured, 560,877.

Production 1937 :

Wool, merino	4,662,779 lb.
Sheep and goats, head	1,695,325
Hides and skins	195,306 lb.
Horned cattle, head	418,921

Trade 1937 :
Imports £760,736; Exports £368,629.
Roads. Class A, 360 miles; class B, 132 miles.
Finance 1936–37 :

Revenue, ordinary	£332,553
Expenditure, ordinary	£300,342

BAUER, OTTO, Austrian politician, was born in Vienna in 1881, and died in Paris on July 4, 1938. A biographical notice of him may be found in the *Ency. Brit.*, vol. 3, p 226. He kept his position of power among the Austrian Socialists until 1934, when he had to take refuge in Czechoslovakia as a consequence of the clash between the Socialists and Dr. Dollfuss. After leaving Austria he wrote *Between Two World Wars*. In the spring of 1938 he found it necessary to leave Czechoslovakia for Paris.

BECHUANALAND PROTECTORATE. The country is sandy and waterless, inhabited by pastoral tribes, the principal being the Bamangwato, under Chief Tshekedi Cattle raising is the chief industry, but some forty per cent of the adult males are absent from the territory at work in the Rand mines. Proclamations of 1934 introduced a system of native administration involving a limited form of indirect rule: the policy of both maintaining the customary rule of the Chiefs unimpaired and at the same time introducing more progressive administration involves considerable difficulty The right to regulate the appointment and dismissal of Chiefs was unsuccessfully contested in the Courts by Tshekedi. Gold mining is carried on in the Tati district. (J. L. K.)

Area and Population :
Area (estimated) 275,000 sq miles
Population (1936 Census): Europeans, 1,899, Coloured, 263,857
Production 1937 :
Gold, 17,570 oz.; Silver, 1,503 oz, Cattle, 602,388 head.
Trade 1937-38 :
Imports £341,536; Exports £243,187.
Communications :
Roads, 2,048 miles suitable for motor traffic.
Railways, 396 miles.
Finance 1937–38 :

Revenue, ordinary	£179,124
Expenditure, ordinary	£182,052

BECK, JÓZEF (1894–), Polish soldier and statesman, foreign minister since Nov. 2, 1932, was born in Warsaw and brought up to the ideal of Polish independence. His father, a lawyer and under-secretary of State, was forced by Russian persecution to settle in Austrian Poland, hence the son was educated in Cracow, Lwów, and Vienna.


Vandyk
COLONEL JÓZEF BECK

In 1914, Józef Beck joined Piłsudski's Polish Legion, on the disbandment of which he escaped to the Ukraine and in 1918 took an active part, under Śmigły-Rydz, commander-in-chief of the secret military organization, in the struggle for independence. In the Polish-Soviet war, 1919, he commanded a battery of field-artillery, served on the General Staff, and headed a military mission to Rumania, becoming, after the war (1922–23), military attaché in Paris.

After the *coup d'état* of May 1926, Beck was appointed Piłsudski's chief of the secretariat, and when the latter became prime minister (1930), was nominated vice-premier, later in the year becoming under-secretary for foreign affairs. His history, since becoming minister in 1932, is that of Poland (*q.v.*), and is marked by his success in avoiding entanglements and in keeping his country free from aggression either from the east or the west, and by his satisfactory settlement in Aug. 1938, of the eighteen-year-old Polish-Lithuanian dispute.

Colonel Beck married the divorced wife of General Burckhardt-Bukacki; there are no children.

BÉDIER, JOSEPH, French scholar, was born in Paris on Jan. 28, 1864, and died on Aug. 29, 1938. He spent his early years in Réunion, and after his return to France became known as a leading authority on French mediæval literature. In 1920 he was elected a member of the French

Academy, and from 1929 to 1936 was administrator of the Collège de France. Bédier's best-known work was his adaptation of *Le Roman de Tristan et Iseult*, published in 1900; and among his other publications were *Les Chansons de Croisade* (1909), *Commentaire de la Chanson de Roland* (1924), and also *Les crimes allemands d'après les témoignages allemands* and *L'effort français*, both engendered by the World War.

BEE-KEEPING. There are, unfortunately, no official statistics as to the number of bee-keepers, the number of stocks they own, or the amount of honey produced in Great Britain, so all estimates are a matter of conjecture, based on what information may be obtained from various sources. The number of bee-keepers in England and Wales is probably about 35,000, the number of stocks of bees 140,000, and the amount of honey produced in a normal season is on an average about 50 lb. per hive. In 1938 the honey harvest was very poor, averaging from 25 to 30 lb. per hive, only about half the normal yield. But although the quantity was small the quality was on the whole excellent, much better than that of 1937. Two other features were noted in 1938; swarming was more prevalent than usual, and bees were generally more inclined to use their stings.

In Scotland it is estimated there are about 30,000 stocks of bees. As in England, the season in 1938 was not good, the average for the whole country being about 25 lb. per hive. (J. H-H.)

Colonies of bees in the United States in 1938 numbered 4,500,000 (Department of Agriculture estimate). Annual production of honey is about 160,000,000 lb., with the 1938 crop estimated as about 15 per cent larger. Average production per colony is less than 40 lb., but in North Dakota the average, from sweet clover, runs close to 100 lb Bee-keeping is the most widely distributed agricultural enterprise in the United States and is a $10,000,000 industry. Industrially, honey enters into the manufacture of cosmetics, cigarettes, tobacco, golf balls, shaving cream, wax candles, polishes, and insulation.

In Canada, honey exports for the eight months ending March 31, 1938, were 2,541,400 lb., compared with 2,296,200 lb. for the same period in 1937, in which year total production was 21,733,200 lb., the 1938 crop being slightly larger. Canadian imports of package bees from the U.S. rose steadily from $52,000 in 1932 to $193,300 in 1937.

BEER: *see* BREWING AND BEER.

BEETS AND BEET SUGAR: *see* SUGAR.

BELGIAN COLONIAL EMPIRE. Total area, 960,000 sq. m.; Total population (est. Dec. 31, 1936), 21,898,000.

The following table gives essential statistics relative to Belgium and the colonial and mandated territories administered by her:

BELGIAN CONGO, THE. A progressive native policy is combined with an economic policy involving the close association of the government with large industrial and agricultural undertakings, which in their turn undertake extensive social work among their native employees The government educational programme is carried out by the "Missions Nationales", mostly Roman Catholic, and health work is also in the hands of private organizations A system of compulsory cultivation of marketable crops is in force to encourage native agriculture. Native administration has many characteristics of the British system of "indirect rule" (*see* COLONIAL POLICIES), and special attention is paid to native local government in urban areas The administration of the country has been described as showing the greatest possible contrast to that of the Congo Free State.

The budget bears heavy debt charges, and subventions are made by Belgium to balance accounts; in 1938 this subvention will amount to about fifty million francs.

In addition to the important copper mines, the Chinkolobwe mine in the Katanga is one of the chief sources of the world's supply of uranium. Communications are being rapidly improved by the extension of a network of motor roads, and the Benguella railway provides an additional outlet to the west coast. Air transport, linking the territory with Europe, plays an increasingly important part. Measures are being taken to increase the number of native troops and to create a colonial air force. (J. L. K.)

(The following statistics exclude Ruanda-Urundi)

Area and Population:
Area 927,000 sq. miles
Population (Jan. 1937): White, 20,103, Native, 10,046,731.
Chief Towns. Leopoldville, Elizabethville, Stanleyville.

Governor-General: Pierre Ryckmans.

Production 1936:

Bananas	12,146,000 kilograms
Palm oil	14,268,000 ,,
Cocoa	1,464,000 ,,
Rubber	799,000 ,,
Copper	97,500 metric tons
Diamonds	4,634,266 carats
Gold	13,548 kilograms
Silver	86,515 ,,

Industrial establishments (mining, etc.) (1936). 2,090.

Overseas Trade 1936:

Imports	724,793,000 francs
Exports	1,489,582,000 ,,

Roads (Jan. 1937): 61,171 kilometres (15,125 km. main roads).

Finance:
Revenue (1937): 606,646,000 francs; (1938 estimate) 716,981,000 francs.
Expenditure (1937) 725,837,000 francs; (1938 estimate) 766,981,000 francs.

COUNTRY	AREA sq. miles (approx.)	POPULATION est. Dec. 31, 1936 (000's omitted)	CAPITAL	STATUS	GOVERNORS, PREMIERS, ETC.
BELGIUM	11,775	8,331	Brussels	kingdom	*King*: Leopold III. *Premier*: M. Paul Spaak.
AFRICA					
BELGIAN CONGO	927,000	10,067	Leopoldville	colony	*Governor-General*: M. Pierre Ryckmans.
RUANDA AND URUNDI	21,200	3,500	Nianza (Ruanda) Kitega (Urundi)	mandated territory	United administratively with the Belgian Congo.

Education 1936 :
Official schools for natives, 10 , scholars, 5,337
Mission schools, subsidized, 4,221 , scholars, 204,000.
Native schools, not subsidized, 7,500 ; scholars, 220,000

BELGIUM. Events in central Europe aggravated a financial situation already foreshadowed as serious in 1937, and then ascribed to economic causes, such as customs barriers. In March, Dutch, Swedish, and Swiss banks granted a loan. Eastern frontier fortifications were strengthened and (in September) manned. In March, M. Spaak (then foreign minister) noted the failure of the League of Nations and Locarno, saying : " I cannot base the policy of my country on an ideology in complete decline ". In April, he announced that there could be no question of admitting wholesale political refugees, especially Jews from Austria and Germany ; Belgium favoured the American proposal for a conference on the subject in Switzerland. In view of an emergency budget with a deficit put, in April, at £12,000,000, estimates, except for defence and social services, were curtailed, but additional taxation appeared inevitable. Later, depreciation of the French franc caused grave concern. Over ways and means there was a critical debate early in May. The subsequent vote of confidence did not avert a cabinet crisis. On May 12 the Catholic Conservative members withdrew their support, the cabinet fell, and King Leopold, returning by air from the Hague, charged M. Spaak to form a ministry. This he did (May 13), becoming Belgium's first Socialist premier. The new cabinet (eleven as against fifteen) included three Catholic, four Socialist, and two Liberal members. Simultaneously, the bank rate was raised from two to four per cent. In July the net deficit was quoted as £3,500,000, and in September this was reduced by special powers laid before parliament. In March, the question of diplomatic recognition of the Italian empire over Abyssinia having shaken the cabinet, the appointment of an ambassador was announced. Similar recognition of Spain's Burgos regime (December) provoked Barcelona, and M. Spaak's Socialist supporters grew restive. But he stood firm, reconstructed the cabinet on a broader basis (already M. Albert Janssen had succeeded M. L. Gérard as finance minister), and, at the end of the year, could leave for a short informal visit to Paris. A credit of £4,400,000 for Air Raid Precautions was asked for. As a result of King Leopold's visit to the Netherlands (November) the old Hanseatic ideals revived. Meanwhile, M. van Zeeland had completed his economic investigations in European capitals and America, undertaken at the invitation of the British and French governments, his report recommending measures for removing international trade barriers. In October he left for a further two months' tour, travelling to America *via* England. A sign of the times at home was the foundation (March) of the Royal Flemish Academy of Sciences, Letters, and Fine Arts. King Leopold laid a foundation-stone (March) at Liége for the 1939 Water Exhibition ; unveiled (May) a rose-window in Ypres cathedral to the memory of King Albert, presented by the British Army and Royal Air Force ; and attended in Paris, with other members of the royal family (October), the unveiling of a statue of King Albert. Another memorial to the late king, given by ex-Service men, had been unveiled at Nieuport in July. In the October municipal elections the Rexists failed. (H. Fw.)

Area and Population :
Area 11,775 sq. miles.
Population (Dec. 1936) 8,330,959.
Chief Towns (pop. 1935) :

Brussels	1,250,000	Antwerp	273,772
Ghent	165,269	Liége	162,272

Ruler. King Leopold III
Languages. French and Flemish.
Religion. Christian (chiefly Roman Catholic).
Production 1937 :

Wheat	423,200	metric tons
Barley	85,000	,, ,,
Oats	520,000	,, ,,
Rye	345,000	,, ,,
Potatoes	3,090,800	,, ,,
Beet-sugar	219,100	,, ,,
Pigs slaughtered (1936), head	1,922,000	
Butter	63,000	metric tons
Margarine	54,700	,, ,,
Coal	29,681,000	,, ,,
Pig Iron	3,843,000	,, ,,
Steel	3,869,000	,, ,,
Artificial Silk	7,800	,, ,,
Cement (1936)	2,350,000	,, ,,

Industry :
Index of industrial production (1937) . . 93·6
(1929 = 100) (July 1938) . . 65·6
Labour :
No. of days worked (1929 = 100) (average 1937) . 88·5
No. unemployed (average 1937) wholly 104,785 (11·5%)
,, ,, ,, ,, partly 89,281 (9·8%)
,, ,, (July 1938) wholly 114,555 (12·1%)
,, ,, ,, ,, partly 152,286 (16·1%)
Overseas Trade 1937, Merchandise :

Imports	27,256,800,000 francs
Exports	25,393,900,000 ,,

Communications :
Roads (1937), 9,388 kilometres.
Railways (1937), 5,141 kilometres.
Airways (1937), Distance travelled, 1,854,000 km. ; passenger mileage, 10,655,504 km. ; baggage mileage, 102,276 tons km. ; mail mileage, 41,581 tons km.

	tons net
Shipping, merchant fleet 1,138	236,979
,, vessels entered, monthly average 1937	2,663,000
,, ,, Aug. 1938	2,846,000
,, vessels cleared, monthly average 1937	2,633,000
,, ,, ,, Aug. 1938	2,791,000

Finance and Banking :

Revenue (ordinary) (1938 estimate)	11,392,300,000 francs
Expenditure (ordinary) (1938 estimate)	11,316,900,000 ,,
Public Debt (Jan. 1, 1937)	58,685,500,000 ,,
Notes in circulation (Dec. 31, 1937)	22,146,000,000 ,,
Gold Reserve (Dec. 31, 1937)	17,623,000,000 ,,
Average Rate of Exchange (1937)	29·29 belgas = £stg.1

5 francs (paper) = 1 belga
Education 1936 :
Primary 8,614 schools ; 964,802 scholars.
Higher, 279 schools ; 79,203 scholars.
Universities (1936–37), 4 ; 10,334 scholars.
Defence :
Army (inc. Air Force), strength 1938, 4,671 officers, 85,500 other ranks ; mainly compulsory service (longest term 17 months).
Miscellaneous :
Motor vehicles licensed (Dec. 31, 1937) : 145,050 motor-cars ; 77,328 commercial vehicles ; 67,235 motor-cycles.
Telephones (1936) : Local subscribers, 263,230.

BENEŠ, EDUARD (1884–), former President of Czechoslovakia. Accounts of Dr. Beneš will be found in the *Ency. Brit.*, vol. 3, pp. 402–3, and in *The Book of the Year*, 1938, p. 98. A lifelong Socialist, a brilliant linguist and conversationalist, and a great traveller, he was president from Dec. 18, 1935, until Oct. 5, 1938, when, owing to the new conditions arising from the signing of the Munich Agreement and to the concentrated German attacks upon him, he resigned his office, realizing that his continuance in it would be a hindrance to his country's reaching an understanding with Germany and Italy. In his broadcast

farewell he said: "As a convinced democrat I think it better to go. We remain democrats, and we shall try to continue to work with our friends, but my resignation is imperative in order to accommodate our State to the new circumstances. . . . I do not leave the ship because it is stormy, but because it is a political necessity".

His history during 1938 belongs to the story of Czechoslovakia (*q.v.*), but it may be mentioned here that an important interview with him appeared in the London *Sunday Times* a week before the *Anschluss*, in which he refused to admit the interference of a foreign nation in the affairs of his country, spoke of the possible inclusion of Henlein (*q.v.*) in the cabinet, and stressed his desire for a good understanding with Germany. Further, in April, in token of his conciliatory attitude, he signed an amnesty freeing nearly 2,900 of his 4,200 political prisoners awaiting trial or serving sentences. His reception of Lord Runciman (Aug. 29), his long meeting with the Sudeten leaders, Kundt and Sebekowsky (Sept. 2), his conciliatory broadcast from Prague (Sept. 10), and his later broadcast (Sept. 22) on the resignation of the cabinet were also notable events.

Dr. Beneš, who had formerly been a professor at Prague, now received invitations from many foreign universities, including one to stand for the rectorship of Glasgow, and eventually accepted one from Chicago, where he will lecture on democratic institutions. On Oct. 22, accompanied by his wife and a small secretarial staff, and in broken health, he left his country by air, to rest in England for some weeks before proceeding to America.

BENGAL PRESIDENCY. This province has had a busy year. The Governor, Lord Brabourne, acted as Governor-General when Lord Linlithgow was on leave in the summer, being replaced by Sir Robert Reid, from Assam. The coalition non-Congress ministry of Mr. Fazl-ul-haq met continuous opposition from the Congress minority, but although one minister fell out and there were fierce popular demonstrations, it held its own, receiving substantial support from the European *bloc*. The chief piece of controversial legislation was a Tenancy Bill, which evoked angry but ineffective protests from the landlords; and a comprehensive inquiry, under the chairmanship of Sir Francis Floud, is to be held into the whole thorny question of the Permanent Settlement, which has been a characteristic of, and, many feel, a handicap to, the Bengal administration since the days of Lord Cornwallis. The government introduced Prohibition in one district experimentally, and have been active with plans for social service. Jute, the province's chief industry, has continued in difficulties, due mainly to the lack of world demand. In May 1938 the industry decided to order no more mill machinery, and to adjust the working hours to the market demand. Certain elements refusing to participate in joint action, the government took power to regulate conditions of work by ordinance. On the issue of an edict restricting production, 50,000 mill hands went on strike in December. Following an operation, Lord Brabourne died on Feb. 23, 1939, at the early age of 43 years. (ME.)

Area and Population:
Area 82,995 sq. miles (including Cooch Behar and Tripuro).
Population (1931) 51,087,338.
Governor: The Rt. Hon. Lord Brabourne, G.C.I.E., M.C.
Language. Bengali.
Religions. Hindu (43%); Mohammedan (55%).
Production 1936:
Jute, 2,180,800 acres; Tea, 209,688 acres; Factories, 1,667; Average no. of workers employed, 531,235.
Finance:
Revenue (1937–38 estimate) . . Rs. 13,12,73,000
Expenditure ,, ,, . . Rs 12,21,05,000
Education 1935–36, Recognized Institutions:
Primary (males) Schools, 44,596, scholars, 1,917,419
,, (females): ,, 17,644; ,, 508,925
Motor vehicles licensed (March 31, 1937): 18,247 cars and taxis; 4,716 commercial vehicles; 1,055 motor-cycles.

BERLIN. Private life in Berlin in 1938 was primarily an attempt to cope with the restrictions of the Four Year Plan (which extended even to philately and fashions), while group-life was a mirror of the international crisis. The events leading to the postponement of Hitler's "fifth anniversary" speech on Jan. 30 created much apprehension, and the celebrations were limited to a torchlight procession past the Chancellory. On March 18, Hitler spoke in the Kroll Opera House, and announced a plebiscite on the Austrian question. Berlin was singularly unaffected by the electoral campaign, and the polling-day itself, April 10, was very quiet. Even Göring's speech on April 8 fell flat, for the Berliners applied one phrase of it to themselves, "we have had blows enough". In September, however, the apathy was replaced by despair. There was less public jubilation in Berlin over the Sudetenland than over Austria, because the people realized how close war was. The partial mobilization, and especially the passage of the troops through the city on Tuesday, Sept. 27, depressed the public. Yet there was not the same emphasis on evacuation, gas masks, and open-air trenches as in London or Paris.

The year was a bad one for the Jews, if only because the minister for propaganda is also *Gauleiter* for Berlin. Sporadic outbreaks occurred in June, but the worst excesses took place on the night of Nov. 9, when huge crowds watched the wrecking of shops and the looting of Jewish property. The damage in Berlin was estimated at £11 millions. The riots increased the displacement of Jews from desirable suburbs. They had already been expelled from many residential areas to make way for the building of *Prachtstrassen* or "prestige-streets", and now they were compelled to move to the poorer districts in the north and the centre. Early in December, they were banned entirely from certain areas in the Wilhelmstrasse, the Unter den



Keystone
THE LAYING OF THE FOUNDATION-STONE OF THE HOUSE OF TOURIST TRAFFIC BY HITLER IN THE RUNDEN PLATZ, BERLIN, JUNE 14, 1938, TO START HIS RECONSTRUCTION PLAN

Linden, the Kurfurstendamm, and the Vossetrasse. The aim is to remove them from all the main streets.

A general restriction of business activity occurred during the year There were numerous shortages of food—at times meat and certain vegetables, and nearly always fatty materials. After Sept. 15, the sale of cream was forbidden for the rest of the year. In October, the butter-ration was cut by a further fifth to 200 grams per head weekly; eggs were hard to find; and the Berliner was ruefully asking why so much emphasis was placed on the new "People's Radio" at 35 marks and so little on the food-shortage. This was typical of the attitude of most Berliners, other than young Nazis, during the year. They had become more querulous. (S. H. R.)

BERMUDA. The principal trade of Bermuda is the tourist traffic, and in 1938 tourist arrivals numbered 82,062, almost a record figure. Of these 52,289 arrived direct by ships in regular service from the United States, 1,133 from Great Britain, 1,098 from the West Indies, and 933 from Canada In addition, over 25,000 arrived by cruise ships. The sporting amenities were further increased during 1938 and the golf courses now number twelve. The joint air service provided by Imperial Airways and the Pan-American Line carried an increased number of passengers, who totalled 5,515 during the year. The greatest number came in August. In January a record time was set up, the journey from Baltimore to Bermuda being made in 4 hours 4 minutes.

The bulk of Bermuda's water supply is rain collected from the roofs of houses Owing to a shortage in the spring the House of Assembly voted £500 towards defraying the cost of importing drinking water from New York, 666 miles away. This was sold at $1 per ton.

A controversy arose over the question of ships being used as hotels while in the Colony's harbours, and the House of Assembly voted in favour of this practice being barred. (A. A.)

Area and Population:
Area 19¼ sq. miles.
Population (est. Dec. 31, 1937) 30,951 (White 12,143).
Governor: Lt.-Gen. Sir R. J. J. Hildyard, K C B.
Production (total value 1937). £220,475.
Tourist Trade (estimated average annual expenditure): £1,500,000.
Overseas Trade 1937:
Imports £2,183,152.
Exports, domestic, £32,321; Re-exports, £147,414.
Communications:
Roads, 105 miles; Railway, 22 miles.
Finance 1938:
Revenue £427,017; Expenditure £478,676.
Public Debt (Dec. 31, 1936), £75,000.
Education 1937. Aided private schools, 30, scholars, 4,745. Six of these schools give a secondary education.

BHUTAN is a small independent State lying on the outer Himalaya, N. of Bengal and E. of Nepal. Its capital is Panakha, its area about 18,000 sq. miles, and its population (mainly Buddhists) estimated at 300,000. In return for a subsidy of a lakh of rupees, the ruler accepts the advice of the British in his external relations.

BIHAR. This province of British India as now constituted, and including Chhota Nagpur, has an area of 69,348 sq. miles and a population of 31,371,434. The Governor is Sir Maurice Hallett, and the Cabinet is led by Mr. Shri Krishna Singh as prime minister; there is a bi-cameral legislature. In Bihar proper the population density is about the highest in India. Rice, sugar, tobacco, and all the cereal crops are grown; irrigation abounds, S Bihar being admirably served by the Son Canal system. Coal is extensively mined in the Barakar and Damodar valleys, and the Tata iron and steel works at Jamshedpur are acquiring a world-wide reputation. Under a powerful tariff, the sugar industry is threatened by over-production and inefficiency; and the local government has passed some hasty legislation to control the output, license factories, and fix a minimum price for cane. In Feb. 1938 the government of the province, which owes political allegiance to the Congress, resigned in protest against the Governor's action regarding certain political prisoners; but the crisis was surmounted, *see* under INDIA. The chief city and seat of the High Court, Patna, is also a railway centre of considerable importance; population 159,690 Adjoining it and only partially excavated, is the site of Pataliputra, known to the Greeks as the capital of some of India's greatest monarchs, including Asoka, three centuries B.C. (ME.)

BILLIARDS AND SNOOKER. During 1938, the professionals' competitive activities were confined to the Snooker Tournament promoted by a national newspaper, the World's Professional Snooker Championship, and the United Kingdom Professional Billiards Championship.

Most important of the amateur events was the Empire Billiards Championship played in Melbourne, Australia, and won, as was expected, by Australia's representative, Robert Marshall of Perth. England's representative was the national champion, Kingsley Kennerley of Birmingham, who had the satisfaction of making a new Empire record with a break of 472. Other countries represented in this Empire event were South Africa, India, and New Zealand.

The English Billiards Championship was again won by Kennerley, who, however, yielded his national snooker title to a London jeweller, P H. Matthews.

The year was remarkable for snooker achievements by the world champion, Joe Davis. He first broke his own world record of 135 with a run of 137 at Leicester, and three weeks later set up a new record with a break of 138.

The results of the more important billiards championships and competitions played during the year were as follows: United Kingdom Professional Billiards Championship: Joe Davis 20,933, Tom Newman 19,542; Women's Professional Championship: Joyce Gardner 2,313, Thelma Carpenter 1,824; English Amateur Championship. K. Kennerley 4,714, Joe Thompson 3,925; Women's Amateur



Fox Photos]
J. DAVIS (RIGHT) WITH S. SMITH, BEFORE A SNOOKER MATCH IN WHICH DAVIS MADE A BREAK OF 134

Championship · Mrs McDougall 674, Miss G M. Saunder 563 ; Scottish Amateur Championship. James McGhie 2,636, J. S. Patterson 1,989, Welsh Amateur Championship: Joe Tregoning 1,500, Bryn Gravenor 1,002 ; Northern Ireland Amateur Championship: W. Lowe 1,000, W. R Mills 846 ; Eire Amateur Championship · S. Fenning 1,000, T. O'Brien 873 ; Boys' Championship · Richie Smith 400, Alan Walker 307 ; Boys' International Championship: Scotland 5, England 1 ; Inter-varsity. Oxford 2, Cambridge 1.

The Snooker Championships and competitions resulted as follows : World's Professional Championship : Joe Davis 37 frames, Sidney Smith 24 ; Women's Professional Championship : Ruth Harrison 11 frames, Thelma Carpenter 2 ; English Amateur Championship: P. H. Matthews 6 frames, K. Kennerley 1 ; Women's Amateur Championship: Miss Ella Morris 4 frames, Miss Molly Hill 1 ; Welsh Amateur Championship : Bryn Gravenor 4 frames, Tom Jones 0. (W. G. C.)

BIOCHEMISTRY. The rate of many chemical processes is increased by the presence of traces of substances known as catalysts, which, although they may have exerted the accelerating effect by themselves undergoing a cycle of changes, reappear chemically unchanged at the end. Almost without exception the chemical changes brought about by living matter can take place outside the body only at extremely slow rates or under conditions of temperature, acidity, etc., that would be incompatible with life. In the living creature the rate of these changes is greatly increased by special catalysts called enzymes. Enzymes therefore occupy an essential and central position in that part of biochemistry which deals with the chemical changes that take place in living creatures. The year 1938 has seen important advances in our knowledge of the chemical nature and mode of action of the enzymes themselves.

Enzymes. There has been increasing agreement among workers that many oxidation enzymes are composed of a prosthetic group bound to a specific protein. The prosthetic group is of relatively small molecular weight, and is the " business end " of the enzyme molecule as far as the cycle of changes by which the enzyme exerts its catalytic effect is concerned. The protein moiety is, however, equally essential, for neither protein nor prosthetic group are alone catalytically active. The protein moiety confers catalytic activity on the prosthetic group and governs the high specificity of the enzyme for its substrate. The prosthetic group may be more or less easily separated from the protein. Thus in the case of some of the dehydrogenase enzymes (a group of enzymes which bring about oxidation by activating their substrates to donate two hydrogen atoms to a suitable acceptor) the separation may be effected by dialysis—these are the dehydrogenases that have long been known to require a coenzyme. The coenzyme is now regarded by many as the prosthetic group of the enzyme protein, recombination taking place on mixing the two components. The cycle of oxidation and reduction undergone by coenzymes I and II (mentioned in *Ency. Brit. Book of the Year*, 1938) is regarded as the mechanism by which the dehydrogenase enzyme as a whole is catalytically active. It will be noted that although a prosthetic group, *e.g.* coenzyme I, may be common to a number of dehydrogenase enzymes, the different proteins to which it is combined confer a high specificity as to the substrate attacked. The amino-acid oxidase enzymes which catalyse the reaction—

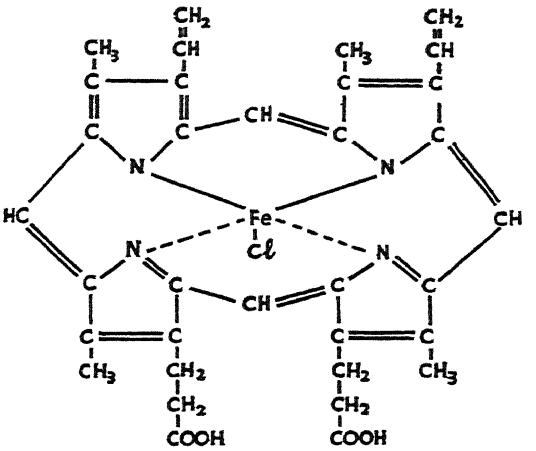
$$R.CH_2CHNH_2COOH + O \longrightarrow R.CH_2CO.COOH + NH_3,$$

are less easily split into prosthetic group and protein. The separation may be effected by precipitation with ammonium sulphate followed by dialysis. The two fractions recombine on mixing, giving full catalytic activity. The prosthetic group is a dinucleotide similar in structure to coenzymes I and II, except that flavin (dimethyl *iso*-alloxazine) replaces nicotinic acid amide (see report for 1937) as the reversibly oxidizable and reducible part of the molecule.

Catalase is an enzyme promoting the reaction—

$$2H_2O_2 \longrightarrow 2H_2O + O_2.$$

By high purification of the enzyme, Keilin and Hartree have shown that the prosthetic group is an iron-porphyrin compound protohæmin :



and that the catalytic activity of the enzyme is due to the reversible oxidation and reduction of the Fe atom of the prosthetic group :

$$4Fe^{+++} + 2H_2O_2 \longrightarrow 4Fe^{++} + 4H^+ + 2O_2$$

$$4Fe^{++} + 4H^+ + O_2 \longrightarrow 4Fe^{+++} + 2H_2O.$$

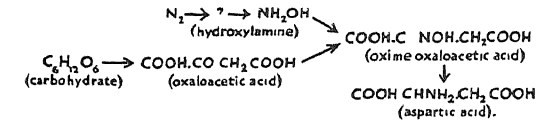
A similar prosthetic group is present in hæmoglobin (the essential part of the O_2 transport system of the blood in mammals), cytochrome (intracellular H carrier), and peroxidase (which catalyses oxidation of some compounds by H_2O_2). The different protein moieties confer quite different catalytic powers on the iron atom of the hæmin.

The presence of —SH groups on the succinic dehydrogenase molecule has been shown to be essential for the activity of this enzyme (Hopkins).

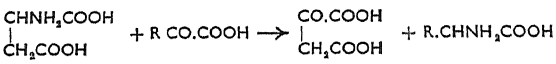
The production or disappearance of bacterial enzymes in response to chemical changes in their environment has continued to receive attention, and may eventually throw light on the mechanism of enzyme formation.

Nitrogen Fixation. The economic importance of the enrichment of soil through the fixation of atmospheric nitrogen by various groups of bacteria has long been realized. The micro-organisms responsible may be divided into two groups: (*a*) free living, *e.g. Azotobacter, Cl. pastorianum*, (*b*) organisms living in symbiosis with leguminous plants (pea, bean, clover, etc.), *e.g. Rhizobium trifolium*. Largely through the work of Virtanen, great advances have recently been made in our knowledge of the chemistry of the fixation process in the case of the symbiotic nitrogen fixers. The nitrogen-fixing power of the leguminous plants is known to be associated with the presence of root nodules. No fixation occurs in the absence of nodules and no nodules are formed in the absence of bacteria. Both plant and bacterial cells are, however, equally essential for the complete fixation process. Virtanen has shown that young seedling leguminous plants fix more nitrogen than is used in the synthesis of new plant material

and the excess is excreted into the soil. By analysis of the excreted nitrogen strong evidence for the following scheme for the chemical course of nitrogen fixation has been obtained :



Nitrogen fixation by crushed nodules can take place providing that oxaloacetic acid is supplied, but there is no fixation by the bacteria alone in the absence of plant material. In the presence of plant tissue the amino group of aspartic acid can exchange with the keto group of a number of ketonic acids :



The synthesis of amino-acids other than aspartic acid can therefore take place via aspartic acid as intermediary.

Photosynthesis. Plants are able to utilize carbon dioxide as the sole source of carbon. The carbon dioxide is converted to carbohydrate and oxygen is evolved ; the energy for this synthesis is obtained from light via the pigment chlorophyll. The chemical mechanism of this photosynthesis is still obscure, but the situation has become more hopeful by the demonstration of the occurrence in the plant of complexes of chlorophyll and protein. These protein-chlorophyll compounds are stable to light, whereas solutions of pure chlorophyll deteriorate rapidly. Furthermore, the absorption spectrum of the complex closely resembles that of chlorophyll in the leaf, whilst the spectrum of pure chlorophyll extracted from the leaf is somewhat different. The possibility that such protein-chlorophyll complexes may prove to be catalytically active will be realized from the paragraph on enzymes.

Oxygen evolution by isolated chloroplasts in the presence of a chemically defined substrate (ferric oxalate) has recently been demonstrated.

Proteins. An important contribution has been made to the problem of the synthesis of protein. Such synthesis is essential to the growth and multiplication of cells, but, although a good deal is known of the enzymic breakdown of proteins, until recently nothing was known of the synthetic process. Bergman has now demonstrated that the enzymes papain and chymotrypsin, formerly regarded as being proteolytic only, can also catalyse the synthesis of the peptide linkage between some amino acids. It is necessary to " protect " the $-NH_2$ and $-COOH$ groups not involved in the peptide formation. This is done by benzoylation of the $-NH_2$ group and anilide formation with the $-COOH$ group. Thus in the presence of papain benzoyl-*l*-leucine reacts with *l*-leucine anilide forming the dipeptide derivative benzoyl-*l*-leucyl-*l*-leucine anilide.

$$\underset{\text{(benzoyl-}l\text{-leucine)}}{C_6H_5CO{-}NH.CH(C_4H_9)COOH} + \underset{\text{(}l\text{-leucine anilide)}}{NH_2CH(C_4H_9)CO{-}NH.C_6H_5}$$
$$= C_6H_5.CO.NH.CH(C_4H_9)CO{-}NH.CH(C_4H_9)CO.NH.C_6H_5 + H_2O$$

A similar reaction between benzoyl-*l*-tyrosine and glycine anilide has been demonstrated with crystalline chymotrypsin. There now seems a strong possibility that the intracellular proteinases such as papain and kathepsin may be primarily concerned with the synthesis rather than the breakdown of proteins.

Nutrition. The disease pellagra (symptoms—dermatitis, diarrhœa, and finally mental trouble) is due to the absence from the diet of a part of the vitamin B_2 complex known as the P-P (pellagra-preventing) factor. This factor has now been identified as nicotinic acid (or amide), and dramatic and immediate cures of human pellagra and similar diseases in dogs, pigs, and monkeys have been obtained by the administration of minute doses of pure nicotinic acid.

Three sheep diseases of economic importance (" coast disease " of Southern Australia, " pine disease " of Great Britain, and " bush sickness " of New Zealand) have been shown to be associated with a deficiency of cobalt in the pasturage. Prevention or cure can be obtained by the administration of about 1 mg. cobalt per day.

General. The use of isotopes of several elements for " marking " compounds has provided a new technique in metabolic investigations. Work has already been carried out with compounds in which atoms of hydrogen, nitrogen, and phosphorus have been replaced by heavy hydrogen, heavy nitrogen, and radioactive phosphorus respectively. As these isotopes are readily identified, it may be possible to follow the course of metabolism of the " marked " compound.

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BIRD REFUGES : *see* WILD LIFE, CONSERVATION OF.

BIRMINGHAM, city and bishopric, Warwickshire, England ; pop. (est.) 1,048,000 ; approx. rat. val. £7,093,000 ; rates (1937–38) 15*s.*, (1938–39) 15*s.* 6*d.* ; debt £60,046,453 ; area 51,147 acres.

The second largest town in England and sixth in the British Empire, " The Metropolis of the Midlands " runs its own gas, electricity, and transport undertakings, its baths, museum, art gallery, and school of art, etc., also its municipal bank ; its manufactures are estimated to embrace 1,500 trades, and include small-arms, bedsteads, jewellery, machinery, tools, bakelite goods, and practically everything connected with railway-stock, cycles, motor-cycles and cars, and wireless sets, as well as chemicals, chocolate, etc.

The Hospital Centre which, during construction, was visited by the Duke of Kent in 1937, was completed in 1938, and was opened by the Duke and Duchess of Gloucester, on behalf of the King and Queen, in July. The opening coincided with the charter centenary celebrations of the Corporation, which included the staging of a great historical pageant, in which 8,000 performers took part and which the Duke and Duchess attended. During the year the foundation-stone was laid of the first building in the Civic Centre, and rapid progress is being made towards its completion. The Birmingham Airport scheme has shown considerable development, and the airport, which by then will have cost about £350,000, will be ready for use early in 1939 : the scheme will eventually cost over £500,000. Other municipal developments include the provision of a new market, with which is combined a large air-raid shelter, extensive additions to the electricity undertaking, and further housing developments which bring the total of houses erected by the municipality to 50,000.

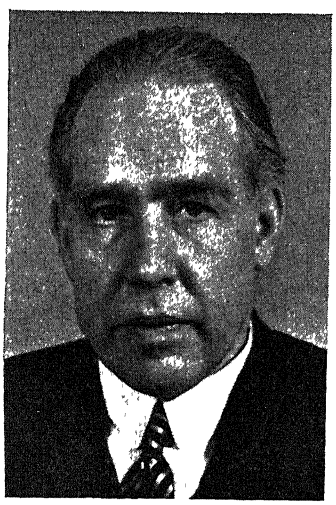
Industrial developments of very considerable magnitude have taken place, many of them connected with the air expansion programme ; the largest undertaking for the manufacture of aeroplanes is that of Lord Nuffield, to cost £3,000,000, and several " shadow " factories are now in production. Transport facilities, vital to the country's most inland city, have been improved by schemes of road

reconstruction and the provision of further canal warehousing facilities by the Grand Union undertaking, which in recent years has put in hand extensive improvement schemes upon its London–Birmingham route. During the year was celebrated the centenary of the opening of the London–Birmingham railway, which was the first provincial link with the capital.

While employment conditions in the autumn were less favourable than a year before, Birmingham remains among the most prosperous of the country's industrial centres: the increase in unemployment is partly due to the immigration of workpeople from depressed areas. (L. H. D.)

BIRTH STATISTICS: *see* VITAL STATISTICS.

BOHR, NIELS (1885–), Danish physicist, of whom a biographical account will be found in the *Ency. Brit.*, vol. 3, p. 788. After taking his doctor's degree at Copenhagen, he worked first at Cambridge, under Sir J. J. Thomson, and later in Sir Ernest Rutherford's laboratory, Manchester. In 1913, the year after his marriage, he became a lecturer at Copenhagen, and published his first papers on the quantum theory; in 1916, he was appointed professor of theoretical physics at Copenhagen, where he helped to found the institute of which he has been director since 1920. He achieved world-wide fame for his experiments in atomic structure, and his demonstration in 1921 of the applicability of the quantum theory to the physical and chemical properties of the elements led to the discovery of the element hafnium by Coster and von Hevesy. He was awarded the Nobel prize for physics in 1922, and four years later was elected a fellow of the Royal Society. In 1938, at the annual meeting of the British Association, he referred to the recent discovery of a new type of particle (which he proposed calling the "yukon" after its discoverer, Yukowa), which is believed to play a role in the phenomena of nuclear disintegration. In November he was awarded the Copley Medal by the Royal Society.

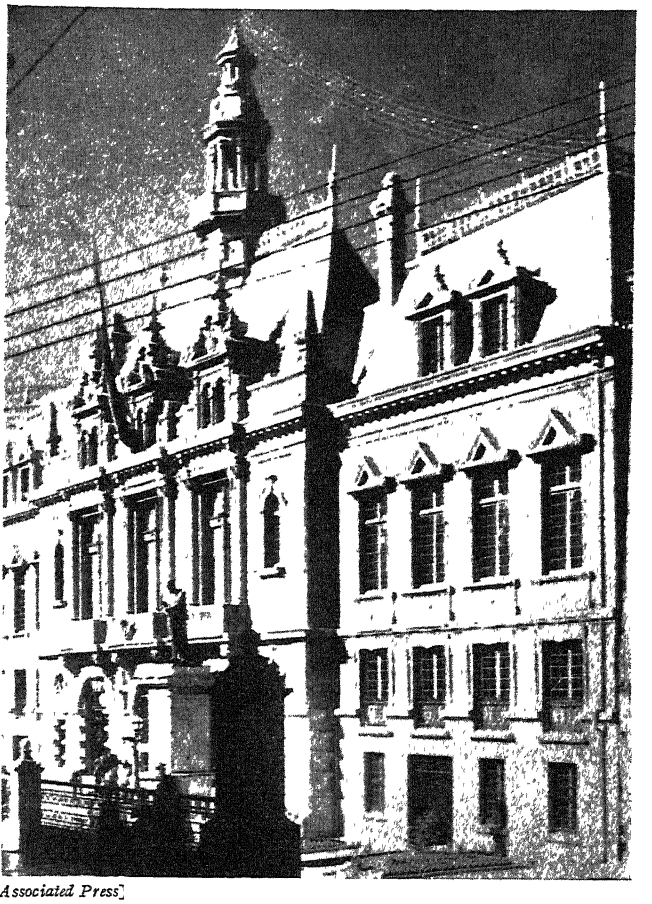


PROFESSOR NIELS BOHR

Based partly on J. W. Nicholson's discoveries in connexion with the atom, the work of Professor Bohr, who has been named "the Newton of Spectroscopy", can be regarded as the most important of all contributions to the modern theory of spectra and atomic structure.

BOLIVIA, a South American inland republic on the Southern Andean plateau; language, Spanish; capital, La Paz; president, Colonel German Busch. The area as adjusted by the Chaco arbitral award of 1938 is unofficially computed at 419,470 square miles. Population (official estimate, 1937), 3,226,295, with 50·9 per cent Indian, 26·8 per cent Indian and white admixture, 12·7 per cent white, 9·6 per cent "unspecified". Chief cities, with officially estimated populations (1936): La Paz, 202,000; Oruro, 44,826; Cochabama, 36,874; Potosí, 28,492; Sucre, 27,508.

There were several abortive revolutionary attempts during 1938. Termination of the Chaco controversy with Paraguay, settled by the treaty of July 21 and arbitral award of Oct. 10 (*see* CHACO), however, promised greater stability for the future. On Feb. 25 a treaty was signed with Brazil providing for establishment of railway communication between the two countries, and the exploration and exploitation of Bolivian petroleum to supply the Brazilian market.



Associated Press

THE MUNICIPAL PALACE, LA PAZ, BOLIVIA

Inducements to immigrants included free land grants in eastern Bolivia and aid while getting settled, but since Government policy is one of slow infiltration of agricultural workers, it gave little encouragement to efforts to obtain a haven for refugee Jews.

Education. There are 1,600 primary and secondary schools, and three universities.

Finance. The monetary unit, the boliviano, is tied to the pound sterling at the ratio of 141·4 to 1, and trade statistics are reported in sterling.

Trade and Communication. Under the Chaco peace treaty of July 21, 1938, special rights of transit through Puerto Casado on the Paraguay river were obtained. Bolivia has 1,403 miles of railway, with 50 miles under construction, and 500 miles surveyed and projected. A further 454 miles, including a projected line to the Brazilian border, is under study. Main highways aggregate 1,900 miles in length, and secondary (open only in the dry season) 3,275 miles. A further 816 miles is under construction, but the highway system is generally inadequate, and air service is the only means of transport to parts of eastern Bolivia. Over 12,000 miles of navigable rivers provide a further undeveloped communication.

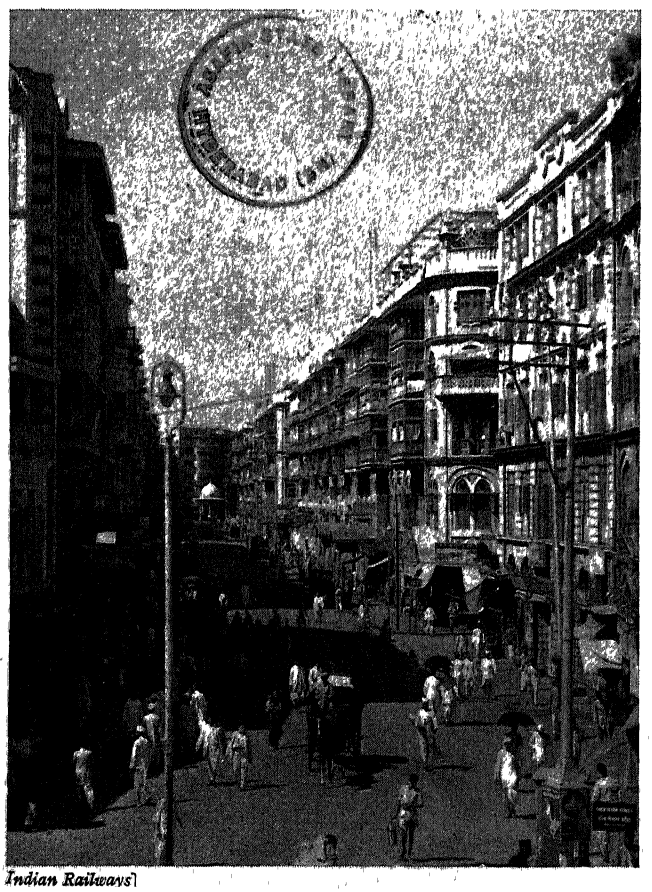
Exports are 97 per cent mineral (70 per cent tin), and totalled £9,011,724 sterling in 1937, 29·2 per cent more than in 1936, and £3,674,439 in the first half of 1938. Imports (manufactured goods and foodstuffs) were £4,009,818 in 1936 (United States, 30 per cent; Great Britain, 13·1 per cent; Germany, 11 per cent), and £1,964,997

in the first half of 1937 (United States, 25·6 per cent; Peru, 16·3 per cent). A 35 per cent increase was reported for the first half of 1938.

Agriculture and Minerals. Bolivia ranks third in world tin production, with 49,844 metric tons in 1937. Silver, gold, lead, wolfram, zinc, antimony, and copper are also produced in quantity. Bolivia has extensive petroleum resources, but produced only 91,000 barrels (est.) in 1938. Agriculture, with 4,940,000 acres under cultivation, falls short of domestic needs. (L. W. Be.)

BOMBAY, the "gate of India", lies on a group of islands connected by causeways and is one of the great industrial centres of the East. Its population is 1,161,383, including a small fraction of Parsees who play an important part in its financial and commercial life. The municipal corporation has just decided to democratize its constitution by introducing adult suffrage and having no nominated members—an attack upon the landlord interests, which were regarded as retarding development. The city's industries, in which cotton predominates, are recovering slowly from the recent depression; but a local scandal caused the stock exchange to close for six weeks early in 1938. (Me.)

BOMBAY PRESIDENCY. Politically the year 1938 has been one of great activity. Sir Roger Lumley continued Governor and Mr. B. G. Kher's Congress cabinet retained office. It had to face industrial difficulties on the one hand and rural problems in Gujerat and elsewhere on the other. A Trade Disputes Act, to regulate trade unions and prevent lightning strikes and lock-outs, provoked a strike of 40,000 Bombay mill-hands; they attacked the police, who had to fire. Another measure which evoked fierce opposition, though from another quarter, was a Tenancy law designed to give the peasantry greater security of tenure. A third measure of importance was the Forfeited Lands Restoration Act which restores to the former owners, on very modera compensation, lands forfeited and sold for non-payment rent during the civil disobedience campaign organized b Mr. Gandhi in 1930–31. The province was hard hit by slump in cotton, but while the manufacturers in Bomba were calling out for an export subsidy, a textile delegatic from Manchester was arguing at Simla for better treatmer in the Indian markets. This mission broke down; an when the central government's commerce minister, S M. Zafrullah Khan, came to England in September to di cuss matters with the Board of Trade, the result was equall unsatisfactory. (Me)



Indian Railways

STREET SCENE, BOMBAY

Area and Population:
Area 72,221 sq. miles.
Population (estimate 1937) 18,192,475.
Governor: Sir Lawrence Roger Lumley, G.C.I.E.
Languages. Gujerati, Marathi, Kanarese.
Religion. Mainly Hindu.
Production 1936:
Factories, 1,611; Average no. of workers employed 391,771.
Cotton industry, spindles 6,386,21
,, ,, looms 148,20
Finance:
Revenue (1937–38 estimate) . . Rs. 11,99,55,00
Expenditure ,, ,, . . Rs. 12,18,08,00
Education: recognized institutions (including Sind) 1936 Primary schools, 14,952; Secondary schools, 787 Scholars: 1,090,057 males, 340,408 females.
Motor vehicles licensed (March 31, 1937): cars and taxis 27,300; commercial vehicles, 1,750; motor-cycles, 1,550

BONNET, GEORGES (1889–), French politician born in Bassilac (Dordogne), son of an appeal judge, he studied law and became a Privy Council probationer in 1912; sergeant, later lieutenant, during the War (Croix de Guerre, Légion d'Honneur), he helped to form the League of Nations and represented France at the Barcelona and Geneva Conferences of 1922 and 1923. Elected deputy for Dordogne in 1924, under-secretary in the Painlevé cabinet in 1925, he lost his seat in 1928, but won a by-election the following year. Minister of finance and president of the French delegation to the London Economic Conference in 1933, he became minister of commerce in 1935, signed a commercial treaty with the U.S.A., was appointed ambassador to Washington in 1937, and returned a few months later to become minister of finance in the Chautemps cabinet. Since April 1938 he has been minister of foreign affairs. He was created G.C.M.G. during the Paris visit of the British Sovereigns in July, and in September accompanied the French prime minister to London in connexion with the German-Czech crisis. His action at that time in bringing pressure to bear on Prague in order to secure the acceptance of the Franco-British proposals resulted in several ministers indignantly tendering their resignations to M. Daladier as a protest. In November, partly owing to M. Bonnet's initiative, a French ambassador was appointed to Rome, and later in the same month he, with M. Daladier, received the British prime minister and secretary for foreign affairs on their official visit to Paris.

BOOKS: *see* Publishing.

BOOK SALES. No previous year has shown so clearly as 1938 that London is the centre of the world's trade in rare books. Both buyers and sellers from the Continent and the U.S.A. have been prominent in the London auction rooms. As usual, the majority of important book sales have been held by Messrs. Sotheby. The year began with the fourth part of the Clumber sale (Feb. 14–16), consisting mainly of manuscripts, including a large collection on

heraldry and genealogy. The total was £7,144. On Feb. 22 a fine copy of the Kilmarnock edition of Burns sold for £800. On March 23 began the dispersal of the finest collection of French books ever sold in England, the library of the late Mortimer Schiff, an American banker, which was significantly sent to England for sale. It was noteworthy for its fine decorative bindings. Record prices for bindings were probably the £900 paid for an eighteenth-century binding by Padeloup, covering a French edition of the *Imitation of Christ* (lot 253), and £1,110 for a copy of *Theophrastus* bound for Henri II and Diane de Poitiers. Among the many French editions of French classics was Molière's *Les Précieuses Ridicules*, which sold for £880. The first portion of the famous library at Ham House sold on May 31 for £11,117. It was rich in books from the presses of Caxton and Wynkyn de Worde, but the prices on the whole were disappointing. Lot 210, Le Fèvre's *History of Jason*, Caxton 1477, probably the first book printed in England, sold for £2,400. The second portion of this library was auctioned on June 21 for £16,250. It included a copy of the third folio edition of Shakespeare bound in contemporary red morocco, which possibly had belonged to Pepys. This realized £3,200. In the same sale was a large-paper copy of the first edition of Swift's *Gulliver's Travels*, which fetched the enormous price of £2,500. On July 5–7 the second part of the Schiff collection, containing similar material to the first, realized £15,700. A copy of the *Chansons de Laborde*, formerly the property of the Earl of Caernarvon, which is the most famous example of French eighteenth-century illustration, fetched £850. On July 26 the autograph manuscript of the eighth codicil to Napoleon's will, perhaps the last words the Emperor ever wrote, was brought for £820. Since the summer the only important book sale was that in December of the last portion of the Schiff library, which realized £12,840, and a book sale in December, where two remarkable bookbindings by the great Victorian craftsman Bedford sold for the high prices of £128 and £155.

During 1938 Messrs. Hodgson's regularly held book sales of less sensational interest. The two most important sales were medical books from Sion College held in April, including a first edition of Harvey's work describing the discovery of the circulation of the blood, Frankfurt 1628, which sold for £238; and books from the library of Thomas Hardy sold in May, where a presentation copy of Barrie's *Little Minister* brought £255. The total of each of these sales was £2,600. (J. I. D.)

United States. The principal dispersals in the United States were the Cortlandt Field Bishop and the William Randolph Hearst collections. The Bishop library was a remarkably catholic assemblage of incunabula, finely printed and superbly illustrated books, manuscripts, horæ, armorial and fine bindings, and English and French literature. Included was the Blickling homilies, properly described as "the earliest and greatest literary monument available, embodying the elements of the future greatness of English poetic prose", and dating from the tenth century, which brought $38,000 as against $55,000 in the sale of the marquis of Lothian's library in 1932. The Hearst collection, embracing many fields, was especially rich in choice Americana, particularly books connected with Washington and Lincoln.

The end of the year witnessed in New York the sale of a hitherto unreported copy of Poe's *Tamerlane and Other Poems*, issued anonymously (or rather as "by a Bostonian") in Boston in 1827. (The anonymity may be regarded as double, in that Poe himself was then a soldier in the United States Army under the name of Edgar Perry.) Twelve "Tamerlanes" are now on record, yet "Tamerlane" has so long served as the touchstone of rarity among the crown jewels of American literature that the world of bibliophily eagerly awaited the sale of the latest copy, which brought $4,300—a satisfactory price considering its condition.

BOOTLEGGING. The problem of the illicit liquor trade remains acute in the U.S.A. The latest figures (1938) give 11,407 stills seized with over 7,553,848 gals. mash and 344,668 gals. spirits confiscated, together with other property with appraised value of $2,599,999. Arrests for Federal liquor law violations were 25,867 (*Ann. Rep. Com. Int Rev. U.S.*), and the latest annual report of the Attorney-General for 1937 gave 26,784 individual defendants in cases filed, 20,162 of whom were defendants in liquor tax cases, and 21,550 convictions.

Coal. In 1936–37 bootleggers mined and sold illegally 2,400,000 tons of anthracite coal, about 5 per cent of total legal output, for which consumers paid $16 millions. Some 13,000 men were employed in the trade.

BORNEO. This large island in the East Indies is divided politically into Dutch Borneo, the (British) State of North Borneo, and the British protectorate of Brunei (*q.v.*) and Sarawak (*q.v.*).

The State of North Borneo is governed and administered, under British protection, by the British North Borneo Company: the State finances are under the exclusive control of the Company. Both natives and Chinese have benefited by the comparatively high prices of copra and rubber during 1937. In 1934 a concession was granted to the Anglo-Saxon Petroleum Company, Ltd., and operations are proceeding. There has been a marked revival in the seed pearl industry.

Area and Population:
Area *c.* 29,500 sq. miles.
Population (est. Dec. 31, 1937) 299,311 (*c.* 50,000 Chinese).
Governor and Commander-in-Chief. Mr. C. R. Smith.
Production 1937 (Export figures):
Rubber, 29,596,820 lb. ($8,786,711); Copra, $763,217; Tobacco, 407,081 lb.; Sago, 2,686,866 lb.; Edible birds' nests, $41,065; Cutch, $319,475; Timber. $2,842,189; Tinned, dried, and salt fish, $722,023.
Overseas Trade 1937:
Imports, net, $6,357,047; Exports, $14,766,536.
Communications:
Roads: 236 miles open to motor traffic.
Railways, 125 miles.



Wide World Photos]
A JUNGLE IN BRITISH NORTH BORNEO

Finance and Banking 1937:
Revenue, $3,556,144; Expenditure, $1,797,510.
Note circulation (Dec. 31, 1937), $1,824,586.
Currency, Straits $ = 2*s.* 4*d.*

Education 1937: Schools, 49; scholars, 4,736.

Details of the area and population of **Dutch Borneo** are:

Area and Population:
Area. Western District, 56,664 sq. miles; Southern and Eastern District, 151,621 sq. miles.
Population: total (census 1930) 2,194,533.

Government: under the Governor-General of the Netherlands Indies (*q.v.*).

BOSTON, seaport at the head of Massachusetts bay; capital of the State of Massachusetts, U S. Population (1935 State census) 817,713. The mayor Maurice J. Tobin (four-year term) and city council (two-year) took office in January.

Boston and the metropolitan area lost thousands of valuable trees in the New England hurricane of Sept. 21, 1938, but the greatest loss came from the paralysis of public services and transport facilities.

WPA projects (1938) included the Huntington avenue subway extension, a Huntington avenue underpass, the re-laying of sixteen miles of sewers and water mains, and the construction or reconstruction of forty miles of streets. The Massachusetts avenue underpass, the new Suffolk county court house and the South Boston housing project were opened. The U.S. Housing Authority allotted $29 millions for new projects.

Boston is the chief U.S. wool market and an important fishing port. Wool receipts (1937): 321,251,000 lb. Fish landed (1937): 321,226,753 lb., value $8,324,859; (Jan.–Oct. 1937): 306,660,264 lb., value $7,211,399, a 4·9 per cent increase by weight and a 4·8 per cent decrease by value. Total commerce of the Port of Boston: (1937) 18,390,390 tons (of 2,000 lb.), value $955,281,525; imports, 2,678,094 tons; exports, 473,073 tons; (Jan.–Oct. 1938): imports declined 55·4 per cent in value; exports declined 28.6 per cent. Passenger traffic to foreign ports (1937): arrivals 57,284, departures 16,395.

BOTANICAL GARDENS. At Kew, industrial developments causing serious pollution of the air affected some of the delicate plants and trees in the Royal Botanical Gardens. The arboretum at Tunbridge Wells is being prepared to receive plants which must have a cleaner atmosphere. The rock gardens were enlarged. Staff changes included the retirement of Mr. H. C. Sampson, economic botanist, who was succeeded by Sir Geoffrey Evans, lately of the Imperial College of Tropical Agriculture, Trinidad. Mr. J. Coutts, curator, retired and was succeeded by Mr. W. M. Campbell; Mr. J. H. Preston became assistant curator in the herbaceous and alpine department. Mr. C. A. Gardiner is working at Kew on a flora of Western Australia. The Dublin Botanic Gardens acquired the forestry herbarium of the late Professor A. H. Henry.

British Empire. In January 1938, the Royal Botanical Gardens at Calcutta celebrated its 150th anniversary. Delegates to the jubilee meeting of the Indian Science Congress visited it and the superintendent, Mr. Kalipada Biswas, received a D.Sc. degree for the thesis, *Studies on the systematic botany of India.* At Montreal, Canada, the development of the Jardin Botanique proceeded actively, and a large building is being constructed to house administrative offices, laboratories, a library, herbarium, and botanical museum. In the Straits Settlements, monkeys were trained to collect rare plants. Mr. J. W. Ewart was appointed as assistant curator of the Singapore Botanical Gardens, and Mr. A. J. M. Middlement as assistant curator of the National Botanic Gardens at Kirstenbosch, South Africa.



Netherlands Information Bureau]
BOTANICAL GARDENS, BUITENZORG, JAVA

United States. At the New York Botanical Gardens, Dr. William J. Robbins, University of Missouri, was appointed director and Dr. H. A. Gleason presented a report closing his term as acting director. Dr. John K. Small, director of research and curator, known for his work on the flora of the United States, died in January. Mr. N. Taylor, of the Brooklyn Botanic Garden, was appointed director of the Cinchona Products Institute, New York. The Brooklyn Botanic Garden exchanged plants and seeds with about 160 other gardens and supplied specimens to educational institutions. At Huntingdon, Indiana, a botanical garden of 3½ acres, containing over 300 species of plants and an arboretum, both devoted to the study of the wild native plants of northern Indiana, were dedicated in June.

Europe. In Holland, Leyden University celebrated the 350th anniversary of the founding of its botanical garden. Of the seven oldest gardens, only those at Leyden and at Padua, founded 1545, are still maintained on their original sites. The other old gardens are the Vatican (1447), Leipzig (1542), Pisa (1543), Florence (1546), and Bologna (1567). The Brussels Botanic Garden acquired collections of plants from the Congo. In Poland, Dr. R. Kobendza is in charge of the planting, now in progress, of the new botanical garden of Warsaw University. The garden, which covers 42 hectares, is situated in the Pilsudski Memorial Park. Dr. L. Faucheron was appointed honorary director of the Jardin Botanique de la Ville, Lyons, France,

in place of M. Robert Douin. The director of the new botanical gardens at Moscow, Mr. M. S. Navaskin, has retired. Victor Buchholz, gardens inspector of the Hamburg Botanic Gardens, died. Linnæus' house in the old botanic gardens at Uppsala has been restored as nearly as possible to its state when Linnæus lived there.

Asia. The physiologist appointed to the Treub laboratory botanic garden, Buitenzorg, Java, is Mr. T. H. van der Honest, of Pasoeroean. Mr. J. J. Smith, formerly of the Buitenzorg gardens, has retired, and is now an honorary collaborator at the State herbarium of Leyden. The Buitenzorg gardens are being reorganized in order to revise the Institute programme of work. The mulberry plantation of the Sun Yat Sen University, China, was seriously damaged by bombs.

South America. A new national botanical garden was founded in Cali, Colombia, with funds raised by a large horticultural show held in 1937. (V. R.)

BOTANY. Botanical literature was enriched in 1938 by several historical works. *Sixty Years of Botany in England* by Prof. F. O. Bower gives vivid sketches of his many outstanding contemporaries and an "eye-witness account" of a period in which the foundations of plant morphology were firmly laid and in which modern botany emerged as an experimental science. Fresh light on Linnæus and the species concept is shed by the published address of Dr. J. Ramsbottom delivered on the 150th anniversary of the Linnean Society. Prof. W. Stiles summarizes the development and present status of knowledge of the general physiology of plant cells. The latter deals with more controversial issues. Though he speaks with some authority in this field many will not always agree with Stiles's interpretations, especially of the evident trend of recent years toward the recognition that plant cells invoke vital processes to accumulate their salts.

Morphology. Sir Arthur W. Hill[1] has made a notable contribution by an account of the seedlings of certain apparently monocotyledonous genera of dicotyledons. In these (Cyclamen, Corydalis, Pinguicula, Peperomia) the single cotyledon has been regarded as two fused cotyledons. This view is now disproved. The seedling "monocotyledonous" Peperomias really have a second cotyledon which never leaves the testa and is only an absorbing organ. Very striking is the case of various genera of the Gesneriaceæ in which one of the two cotyledons continues to grow at its base while the other aborts at an early stage. In some species the enlarged cotyledon is the only leaf on the plant and it is shown that it consists of the enlarged, hairy base of the petiole with the glabrous cotyledon still recognizable at its tip.

An examination (by Kausik[2]) of the floral morphology of *Grevillea robusta*, one out of 160 species in a genus of the large family Proteaceæ, describes a unique development of the endosperm. This consists of a coenocytic "vermiform" appendage and it attains a length of 3mm. as it coils and ramifies throughout the chalaza and on its way digests the nucellar tissue. This surprising structure constitutes an absorbing organ for the nutrition of the developing embryo sac.

Fossil Plants. Barghoorn and Bailey[3] have examined specimens from the auriferous gravels (miocene) of California. In this formation logs have been preserved for millions of years although they are not mineralized or carbonized and the cell walls still contain cellulose and lignin. The anatomy of the wood has been described and illustrated by elegant figures and it is concluded on anatomical grounds that the material is Cedar, not Sequoia as believed hitherto, although it differs from all living species of Cedrus in the absence of ray tracheids.

Anatomy. Tippo[4] has contributed a comprehensive study of the comparative anatomy of the Moraceæ and their presumed allies which is based on an examination of 465 species from 165 genera and 22 families. The comparisons are based on histological features, *e.g.* the type of vessel ending, vessel diameter, type of thickening and pitting, and the general facts of wood and ray structure. The many contributions to histology and wood anatomy and excellent figures will be appreciated even by those who have no enthusiasm for the phyllogenetic approach to anatomy.

Modern views on the structure of the plant cell wall combine the results of microscopical observation and of the physical methods (X-ray diffraction and the use of the polarizing microscope) used in crystallography. Clarke[5] gives a popular account of the results in this field which, though admittedly for the general reader, should hardly ignore the recent work of Preston[6] on the gymnosperm tracheid and of Preston and Astbury[7] on the wall of *Valonia*.

Ecology. In 1930 and 1933 *Zostera marina*, a valuable marine flowering plant which supplies food to birds, shelter to fish, acts as a binder for sand and mud and produces foliage used as an insulating material, almost disappeared from the North American coast. A similar epidemic disease affected British coasts in 1931–32. After an examination of the autecology of the plant Tutin[8] concludes that the causes of the disease are neither pathogens nor pollution but are to be sought in climatic conditions.

Cytology. The spiral structure of chromosomes still arouses controversy. Darlington,[2] who has criticized Gate's assertion that the metaphase chromosomes of *Trillium* contain four strands coiled about each other in pairs because the fixation used acetic fluids, also describes the differential reactivity of definite portions of the chromosomes of *Paris polyphylla* to nitric acid vapour. When these chromosomes react definite portions become more tightly coiled than the rest. Abrupt changes in the spiral direction of chromonemata, which in Trillium may reach 45 per cell, are to be correlated with the frequency of chiasmata at meiosis.

Physiology of Development and Reproduction. Gregory and Purvis[2] have proved that the effect of controlled low (+1° C.) temperatures which will convert a "winter" rye to a "spring rye"—the effect known as vernalization—is upon the embryo itself. Excised embryos can be vernalized in presence of sugar and a minimal oxygen concentration. The effect is specifically due to temperature. Work on photoperiodism (Borthwick and Parker[4]) shows that in Biloxi soya beans the stimulus is "perceived" in the leaves and it is claimed that responses can be discerned in the growing point to as few as two short photo periods. In the cocklebur the effect due to short day stimulus can traverse a diffusion contact between severed portions of the plant (Hamner and Bonner), and a new specific "flower initiating substance" is anticipated. Meanwhile, Gustafson[3,4], by applications of hetero-auxin (indole-acetic acid), has produced parthenocarpic development of certain fruits (*e.g.* tomato).

A large number of publications deal with the substances now termed "auxins". Two papers by Thimann[3] and Went[2,3] may be consulted. The auxines constitute a special group of plant hormones by which it is supposed that the shoot apex exerts its effect on the enlargement of older cells below, suppresses the growth of lateral buds, promotes the regeneration of roots on shoots, controls the differential

swelling of isolated strips of stem (in Pisum, etc.) and, except in almost unbelievably low concentrations (1 gm. in 10^6 litres!), depresses the growth of roots. The molecular configurations compatible with auxine activity are now well known, *e.g.* indole-acetic acid is very active, whereas dihydro indole-acetic acid is inactive. Auxin does not act independently but the tissue also requires sugar for its response, and oxidation is believed to be an integral part of the mechanism. The spate of growth substances continues. A wound hormone, traumatin—which induces intumescences in the tissue of legumes, has been postulated and active preparations made. Went now postulates that effects of auxin, other than on cell elongation, are secondary and due to the role of auxin in activating other specific growth substances, termed calines. Hypothetical calines regulate stem elongation (" caulo-caline " from roots), root growth (" rhizo-caline " from cotyledons), and growth of leaves (" phyllo-caline "). The sceptic notes that these are as yet mere words—but in this field the sceptics of to-day may be confounded by the accepted facts of to-morrow. Went interprets on his caline hypothesis the results of transplanting etiolated shoot apices of pea on to other " stocks ". The results are reminiscent of the interacting effects of scion and stock in fruit trees which are now well known but unexplained.

Nutrition. The investigation of the special organic nutrients which stimulate growth and development in minute amounts and which explain the beneficial effects of applications of yeast extracts in plant cultures has received a great stimulus by the availability of crystalline vitamin B1 and the substances used in its synthesis. Numerous works deal with the role of these substances in the nutrition of fungi and of roots cultured aseptically. The importance of these and other organic stimulants is established, though their role is unexplained.

The popular imagination, especially in the United States, has been seized by so-called " Soil-less growths of plants ". Sand and water cultures have long been familiar as research methods. Modern work on the nutrients only required in great dilution (so-called " micro-elements " or " micro-nutrients ") has familiarized many with larger scale cultures than hitherto The methods of water culture adopted for the cruder technique of general practice now appear in the guise of a new system of horticulture to which the name " Aquiculture " or " Hydroponics " is given (Gericke[5]). Though impressive results have been obtained extravagant claims are to be deprecated. It is significant that from the very home * of " hydroponics " a manual informs the general public that " growth of plants without soil " is not to be lightly undertaken, whether for pleasure or profit, without adequate knowledge of plant nutrition.

Space prohibits reference to the many advances made in the investigation of plant metabolism.

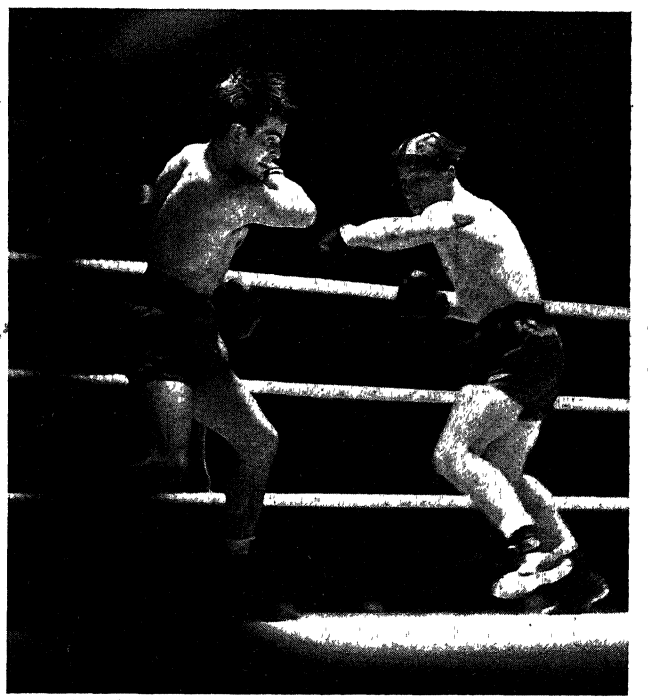
Details of the work referred to above appeared in 1938 in the following journals: [1] *British Assn. Reports*; [2] *Ann. Bot., N.S.*; [3] *Amer. J. Bot.*; [4] *Bot. Gaz.*; [5] *Nature*; [6] *Phil. Trans. Roy. Soc.*; [7] *Proc. Royal Soc.*; [8] *New Phytol*; and [9] *Plant Phys.* * *Univ. of Cal. Agr. Exp. Sta.* (Circular No. 34). (F. C. S.)

BOURNE, ROBERT CROFT, British oarsman and politician, was born on July 15, 1888, and died on Aug. 7, 1938. He was educated at Eton and New College, Oxford. A very great stroke oar, his many fine rowing achievements were overshadowed by his unique record of stroking the Oxford crew to victory against Cambridge in four consecutive years, from 1909 to 1912. He served in the World War in the Herefordshire Regiment, being wounded at Suvla Bay, and was promoted Captain in 1917, in which year he also served on the Claims Commission. Bourne had been called to the Bar in 1913, and after the war he devoted himself to local and national politics. He was elected Conservative M.P. for Oxford City at a by-election in 1923, and since 1931 had been Deputy Chairman of Committees. He was sworn a member of the Privy Council in 1935.

BOWLS. Better weather during most of 1938 and the rise to popularity of the indoor game are the principal reasons for the increase of interest taken in bowls in Great Britain, as evidenced by the increase in entrants for the principal events. In the preliminary rounds—the county championships—of the national championships of the English Bowling Association there were 4,957 entries, in the pairs, 4,584 and in the rinks 2,143, considerable increases in each case. The singles was won by K. C. Cross, of Cosham B.C., Hants; the pairs by the two A W. Knowlings (father and son), of Worthing B.C., for the second time in succession; and the rinks by Paddington B.C. In the inter-county championship for the Middleton Cup Dorset beat Durham, neither having before figured in the finals; and in the internationals the *News of the World* Cup again went to Wales—Ireland, Scotland, and England following in that order. Wales has now won eight times, England seven times, Scotland sixteen times, and Ireland once.

There have been a few slight alterations in the laws during the year, but, in the opinion of many players, they are still far from perfect and in some particulars are in need of clarification.

BOXING. In Great Britain the year 1938 cannot be looked upon as a " boom " year, but when reviewed it will be found that the number of important contests was up to the average, even although a number of Press articles declared the sport to be " dead " and set-backs were experienced from leading boxers failing to make their contracted weight. The greatest shock of the boxing world in this respect was on June 29 when Benny Lynch scaled 6½ lb. over the flyweight limit, thus forfeiting the only



Sport & General]
ERIC BOON (RIGHT) DEFEATING DAVE CROWLEY, DEC. 15, 1938

world's title to be held in Britain. Peter Kane, the Lancashire lad, however, defeated Jurich, the American champion, and thus brought back the title once again. In June also, Johnny King retained his British title against Len Hampston. In August, Johnny McGrory failed to pass the scale, thus forfeiting the British featherweight title. This title, however, was contested and won by Spider Kelly against Benny Caplan in November—Kelly being the first Northern Ireland boxer to win this title and the Lonsdale belt. Activity in the lightweight division brought about two title contests. In June Dave Crowley won the title from Jimmy Walsh, and in December Eric Boon, 18 years of age, created the year's sensation by defeating Dave Crowley. The welterweight division showed the rise of Ernie Roderick, but he was prevented from boxing for the title owing to the repeated illnesses and accidents to the champion, Jake Kilrain. Jock McAvoy started the year holding two titles. He still retains the middleweight title, but lost the light-heavyweight title to Len Harvey in April. Len Harvey again came to the front by defeating Eddie Phillips in December for the heavyweight title, thus, in the same year, becoming the holder of two titles.

The year did not see any outstanding boxer rise from the continent. In April a World's Boxing Conference was held in Rome and plans were again laid down for a working agreement between the continental control body and the British Boxing Board of Control (1929). The newly formed National Sporting Club, Ltd., continued their weekly programmes with further successes, adding greatly to the interest in the sport. The number of professional boxers in Britain increased by 429, making a total of 2,767 actively engaged in the sport, which, together with all other sections, makes an approximate total of 5,000 obtaining their livelihood from boxing. (C. F. Do.)

United States. Negro boxers dominated the ring more in 1938 than any other year in modern times. This, and the return of the million-dollar gate, were the outstanding developments of 1938 in the United States.

Joe Louis reigned as world heavyweight champion and defended his title three times. John Henry Lewis prevailed as leader of the light-heavyweight ranks and retained his title against the few challengers available. Henry Armstrong, who late in 1937 won the world featherweight championship, hammered his way to the world welterweight title and followed this by winning the world lightweight championship, becoming the first boxer in all ring history ever to hold three titles at one time. He found it impossible to make nine stone to defend his featherweight crown, and surrendered his claim to this championship. He finished the year holding the lightweight and welterweight championships, after having defended the welterweight championship twice.

Louis defended his heavyweight title no less than three times within the space of six months. He knocked out Nathan Mann of New Haven in 1 min., 56 sec. of the third round in Madison Square Garden in February. He followed this with a knockout of Harry Thomas of Eagle Bend, Minn., in 2 min., 50 sec. of the fifth round in a bout in Chicago in April; and knocked out Max Schmeling in 2 min., 4 sec. of the first round in their bout held in the Yankee Stadium in June. This last fight drew actual gate receipts of $1,015,096, a figure which included $75,000 realized on the sale of motion-picture and radio rights to the battle. Louis received $349,288 for his brief night's work, and Schmeling collected $174,644.

Armstrong won the world welterweight championship on May 31, when he pounded his way to a decision over Barney Ross of Chicago. On August 17, Armstrong defeated Lou Ambers of Herkimer, N.Y., to gain the lightweight title. Both bouts were held in New York city. Armstrong retained the welterweight championship against Ceferino Garcia, Filipino challenger who was regarded as the most dangerous contender for the 10 st. 7 lb. title, and ten days after this bout, again defended the welterweight title, his last victim being Al Manfredo, in a bout held in Cleveland.

John Henry Lewis made one defence of his light-heavyweight championship. He held the title against Al Gainer, only to have the New York commission withdraw its championship recognition when he failed to take up a challenge issued by Tiger Jack Fox of Seattle. The year ended with this title in dispute. Freddie Steele lost his world middleweight championship to Al Hostak, and the latter in turn lost the championship in his first defence of it when Solly Krieger, of Brooklyn, gained a decision over him. Krieger, however, ignored a challenge from Fred Apostoli of California, and the middleweight championship likewise went into dispute. When Armstrong surrendered his featherweight championship, the title was immediately placed in competition in a tournament sponsored by the New York State Athletic Commission. This was won by Joey Archibald of Providence, R.I., but his claims were ignored by the National Boxing Association which, through its separate membership bodies, controls boxing in forty-seven States. The N.B.A. recognized Al Rodak of Chicago. Sixto Escobar regained the bantamweight championship when he won a decision over Harry Jeffra of Baltimore in February. Greatest confusion, however, involved the flyweight division, in which the British Boxing Board of Control recognized Peter Kane of England, and the California State Athletic Commission, Little Dado, a Filipino; New York State Athletic Commission recognized no holder of the title at all.

BOYS' CLUBS: *see* COMMUNITY CENTRES AND CLUBS.

BOY SCOUTS. The Boy Scout movement continued during the year to develop and increase its scope in most countries, though in Austria and Czechoslovakia its activities were curtailed by the institution of the Nazi regime. The membership throughout the world at the end of 1938 amounted to 2,829,545, according to the latest figures available.

In the parent movement in Great Britain, an appeal for a permanent development fund brought in over £250,000, which included a gift of £50,000 from Lord Nuffield.

During the summer the Chief Scout of the World inspected Scouts in Iceland, Norway, Denmark, and Belgium, during a "cruise of friendship" to these countries on board the S.S. "Orduna". Representatives from 21 different countries attended the First International Conference of Leaders of the Wolf Cub (junior) branch of the movement, which was held at Gilwell Park in July. At Windsor Castle in April the King inspected a St. George's Day Parade of "King's Scouts" from all parts of Great Britain.

Scout contingents from many parts of the world visited Australia to take part in a Jamboree at Sydney, organized by the Scouts of New South Wales.

A large amount of international camping was carried out by Scouts visiting foreign countries for the purpose of their annual camp. National camps on a large scale, attended by contingents from other countries, were held in France, Iceland, Latvia, Lithuania, Luxemburg, Sweden, and

Switzerland. In this way, and through the interchange of correspondence, the movement continued to pursue its policy of international friendship and goodwill.

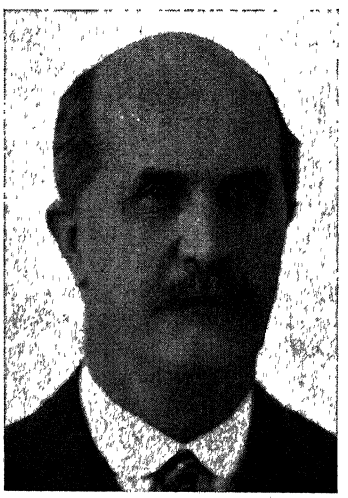
Scouting throughout the world suffered a great loss through the death of Mr. H. S. Martin, C.V.O., who had been International Commissioner of the British movement since its very early days, and Director of the International Bureau since its formation in 1920. The year 1938 saw the completion of the thirtieth year of the Scout movement, founded in 1908 by Lord Baden-Powell. (E. K. W.)

United States. During 1938 the increase in membership of the Boy Scouts of America was 142,059, bringing the grand total membership up to 1,271,900 (Dec. 31, 1938). About 500,000 boys went to camp at some time during the year.

Camping received a great impetus from a magnificent bequest by Mr. and Mrs. Waite Phillips of a reservation in the Rocky Mountain Continental Divide, consisting of 35,857 acres of superb mountain wilderness. More boys than ever went to camp as members of patrols and troops. A new handbook on Rural Scouting was developed which, it is expected, will greatly stimulate Scouting in rural areas. The 28th meeting of the National Council was held in Cleveland, Ohio, and the delegates pledged themselves again to extend Scouting to all boys.

The Schiff Scout Reservation at Mendham, N.J., was widely used for training courses and has a laboratory for troop camping.

BRAGG, SIR WILLIAM, K.B.E., O.M., P.R.S. (1862–), British physicist, a record of whose achievements—especially as a pioneer research-worker in the fields of radioactivity and crystallography—will be found in the *Ency. Brit.*, vol. 3, p. 1011, after holding various professorships became, in 1915, Quain professor of Physics at London, and in the same year, with his son William Lawrence Bragg (*b.* 1890), was awarded the Nobel Prize for Physics and the Barnard Gold Medal of Columbia University. Among the many honours that have been bestowed on him since (beside the K.B.E. in 1920 and the O.M. in 1931) are the Rumford Medal of the Royal Society, the Società Italiana della Scienza's Gold Medal, the Franklin Gold Medal (Philadelphia), the Faraday Medal of the Institution of Electrical Engineers, the medal of the Institute of Metals, and honorary doctorates of the universities of Manchester; Brown (Rhode Island, U.S.A.); Leeds; Trinity College, Dublin; Durham; Pennsylvania; St. Andrews; Oxford; Bristol; Glasgow; Sheffield; Cambridge; and Wales.



P.P. Bureau]
SIR WILLIAM BRAGG

Sir William was president of the British Association, 1928-29, has been Fullerian Professor of Chemistry at the Royal Institution and director of the Davy-Faraday Research Laboratory since 1923, and since 1936 president of the Royal Society. In June 1938, he opened the Meyerstein Institute of Radio-Therapy at the Middlesex Hospital, London. His wife (*d.* 1929) was a daughter of Sir Charles Todd, F.R.S. (*d.* 1910), the English-Australian astronomer and postal administrator. Among his many publications are works on radioactivity and crystallography: *Concerning the Nature of Things* (1925) and *The Universe of Light* (1933).

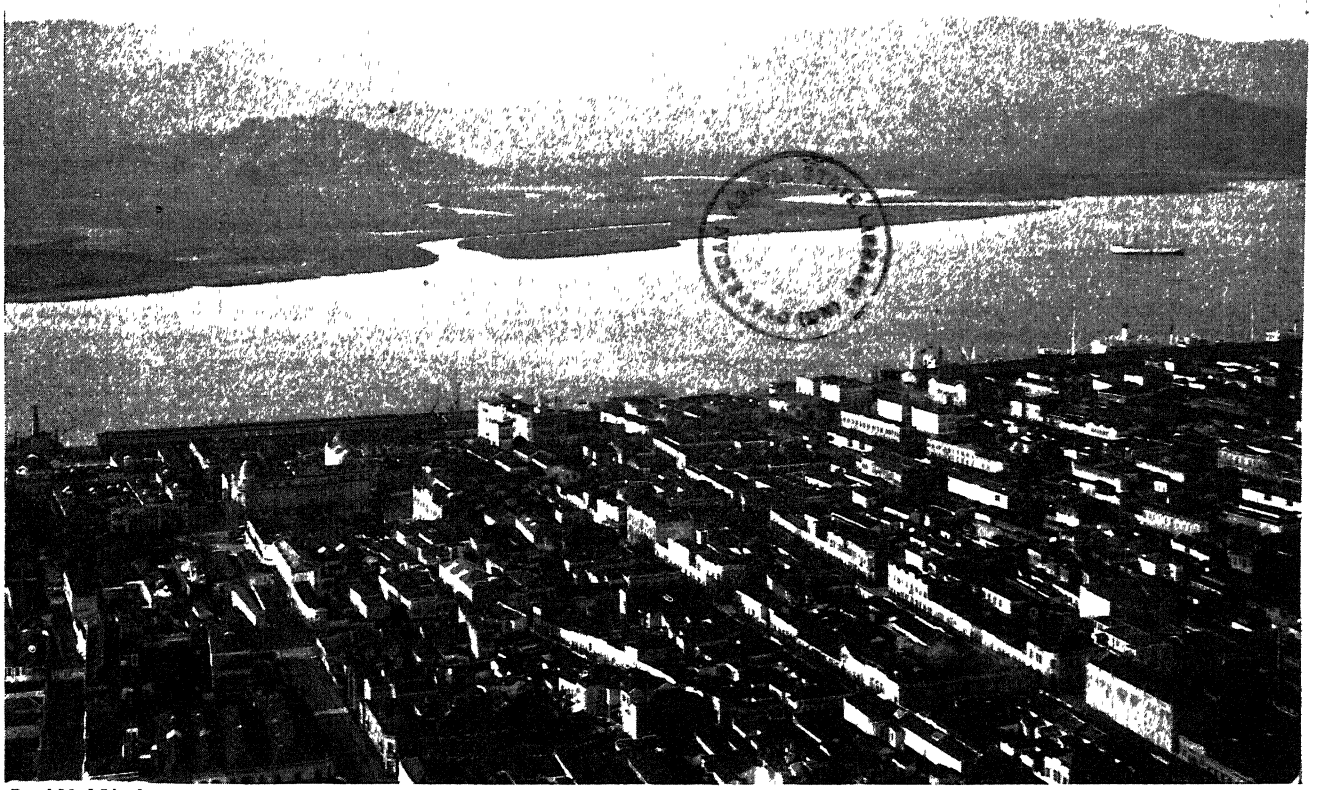
BRAUCHITSCH, WALTHER VON (1881–), German general, was born in Berlin on Oct. 4, 1881, the son of a general of cavalry; he was educated in Berlin, entered a military academy, and became a lieutenant in 1900. Since 1912 and during the World War, Brauchitsch has been a General Staff officer, and his decorations include the Iron Cross (first and second grades) and the House Order of the Hohenzollerns. He was appointed Inspector of Artillery in 1932, and in 1933 replaced Marshal von Blomberg as Commander of the East Prussian Army District, which in 1935 was transformed into the 1st Army Corps. In 1937 he became Commander of the 4th Army Group, and in Feb. 1938 succeeded General von Fritsch as Commander-in-Chief of the German Army, being promoted at the same time Colonel-General. Apart from his military work he is a keen student of economics and foreign policy. He married Elizabeth von Karstedt in 1910 and has two sons and a daughter.

BRAZIL, a republic in eastern South America; language, Portuguese; president, Getulio Vargas. Area, 3,291,416 sq. miles; population (30,635,605 by the census of 1920), officially estimated in 1937 as 43,246,931. Chief cities: Rio de Janeiro, the capital, 1,801,784; São Paulo, 1,217,330; Recife (Pernambuco), 510,102; São Salvador (Bahia), 375,756; Porto Alegre, 352,068; Belém (Pará), 303,740; Bello Horizonte, 193,706.

The Vargas programme, with nationalism and nationalization as its keynotes, resulted in complicated domestic and foreign situations in 1938. Led by Plinio Salgado, the frustrated Integralists continued to operate, and the climax came in Rio de Janeiro at one o'clock in the morning of May 11, when the "Green Shirts" staged a well-planned but poorly executed revolt. Within a few hours the entire movement, which had affected the capital alone, was quashed, with 12 persons dead and 22 wounded. Salgado fled the country. Over a thousand arrests were made and several hundreds were sentenced to gaol, but there were no executions. President Vargas placed the blame for the rebellion on "exotic doctrines". Several employees of a German banking institution in Rio de Janeiro were among those arrested.

Development of the important inland state of Minas Geraes was aided when, in March, it was granted use of the port of Angra dos Reis in order to avoid payment of heavy duties and transhipment tolls through the port of Rio de Janeiro. A direct railway to connect Minas Geraes with Angra dos Reis is contemplated. A further step towards elimination of trade barriers was taken with a decree for gradual reduction of interstate export taxes, with complete abolition by 1943. Vargas decreed the nationalization of Brazil's petroleum industry in April.

The rapid increase of refugees illegally in the country, largely from Germany and Austria, focused attention on the need for new immigration regulations. Equally influential was the susceptibility of Brazil's large and isolated colonies to outside propaganda. A new immigration law (May 4), replacing that of 1934, permitted the annual entry of two per cent of the total of any nationality coming into the country over the fifty-year period 1884–1933, with the requirement, however, that at least eighty per cent of the allotment be agricultural workers. In February, Nazi and



Royal Mail Lines]

SANTOS, BRAZIL

Fascist organizations were closed in Rio Grande do Sul state, which, along with Santa Catharina, has the largest percentage of German and Italian blood in Brazil. By April privately owned foreign schools in both states had been taken over. In that month Vargas promulgated a decree against foreign propaganda in the country. In non-Brazilian communities instruction in Portuguese was made compulsory, teaching of a foreign language to children under fourteen forbidden, and instructors required to be of Brazilian birth. Settlements composed entirely of one nationality are also now forbidden.

Mutual recriminations between Brazil and Germany were violent after the May 11 revolt, and on Oct. 15 Brazil informed Germany that its ambassador, Dr. Karl Ritter, was no longer *persona grata*. Germany countered by requesting the withdrawal of the Brazilian ambassador. Good will between the two countries was likewise affected by their economic relations. Germany insisted upon the barter system of exchange, whereby Brazil was forced to accept "aski marks", good only for the purchase of German goods. Germany was accused of re-selling the Brazilian products thus acquired in competition with Brazil herself.

A pact with Venezuela (Dec. 10) called for pacific settlement of any controversies which might develop. Brazil's ties with the U.S.A. were strengthened in March, when Dr. Oswaldo Aranha, popular ambassador to the United States and long a confidant of President Vargas, was recalled to assume the post of foreign minister.

At the Eighth Pan-American Conference (*q.v.*), the Brazilian delegation, headed by the former Foreign Minister Afranio Mello Franco, desired the exclusion of all "isms" from the Western Hemisphere, and sought unified action of the Americas in the face of possible political encroachments from without, but was unwilling to go to the point of supporting any move for formal military alliance or an American League of Nations.

Education. In 1935 there were 36,661 schools with a total enrolment of 2,862,666. Except in a few cities there is no compulsory education.

Defence. Plans have been made to enlarge and modernize the nation's defences. The army is estimated at 93,892 with a reserve of 206,959. Military service is compulsory. In 1938 three submarines were delivered from Italy; six destroyers were under construction in Great Britain; three more, in addition to minor craft, were being built in Brazilian shipyards. Domestic manufacture of planes paralleled heavy importations of aircraft and munitions.

Finance. The monetary unit is the milreis (value: approximately 3d.), ordinarily expressed in contos of 1,000 milreis each for large transactions. The budget for 1939 as approved by President Vargas estimated receipts at 4,070,969 contos and expenditures at 4,065,599. Payment has been suspended on the Brazilian debt.

Trade and Communications. In October, a fast steamer service was inaugurated from New York to Rio de Janeiro (and thence to Montevideo and Buenos Aires) by the newly organized American Republics Line, operated by the United States Maritime Commission. On February 25, a treaty was concluded under whose terms a Bolivian-Brazilian railway would be constructed to link Bolivia with another projected line between Porto Esperança and Corumbá. (*See* BOLIVIA.)

In 1936 there were only 21,313 miles of railway, chiefly along the coastal plain, but internal communication is

being improved. Electrification has been prominent in railway development. Air service has expanded rapidly, with important lines running into the otherwise isolated Amazonian interior. Brazil has about 17,000 miles of good motor roads. Communications were allotted the second highest percentage of appropriations in the 1939 budget.

In 1937 imports totalled £40,608,000, an increase of more than a third over 1936. In the first nine months of 1938, however, their value declined £2,092,908 compared with the same period in 1937. Oversupply led Brazil to refuse to accept "aski" marks in June, but German suspension of Brazilian purchases and a reduction of the excess supply of marks resulted in trade resumption in November. For the first nine months of 1937, Germany contributed 24·08 per cent of Brazil's imports, the United States, 21·65, Argentina, 15·47, and Great Britain, 12·12. Foodstuffs (especially wheat), manufactured goods, and raw materials constitute the main imports

Exports in 1937 totalled £42,530,000, an increase of 8 per cent over 1936. The United States took 35·71 per cent of exports, followed by Germany (16·16), and Great Britain (9·48). Coffee represented 42·41 of all exports, and cotton slightly over 20. Although bumper crops of both were reported in 1938, their market value decreased, and export values fell accordingly. Owing to the rise of imports in relation to exports, government control of exchange was continued in the first half of 1938, with hampered foreign trade resulting.

Production. Brazil is primarily an agricultural country, although there has been a steady increase in industrialization since 1926. Three-fourths of the world's coffee supply is produced, but other crops have risen in relative importance, pushing coffee, which comprised almost 75 per cent of Brazilian exports in 1933, to less than half in 1937. Cotton has undergone a phenomenal development since 1932, jumping from nineteenth to second place among the country's exports; the 1937–38 crop was estimated at the record figure of 1,568,000 bales. Brazil is second only to the Gold Coast of Africa in world production of cacao. It is estimated that within two years increased production of wheat will meet the entire national demand. The livestock industry, principally cattle, accounts for almost ten per cent of the exports.

Brazil is estimated to possess as much as forty per cent of the world's supply of iron, but lack of capital, coal, and adequate transport have hindered its development. There is no petroleum, but under the Feb. 25, 1938, treaty with Bolivia joint exploitation of that country's oil deposits in the eastern Andean foothills was provided, with special facilities for supplying the Brazilian market.

Manufacturing, a third of it located in the state of São Paulo, is increasing. Resources of a forest area in excess of 1,500,000 sq. miles are as yet only slightly developed, but already supply important commodities, including the castanha (Brazil nut). (L. W. Be; X.)

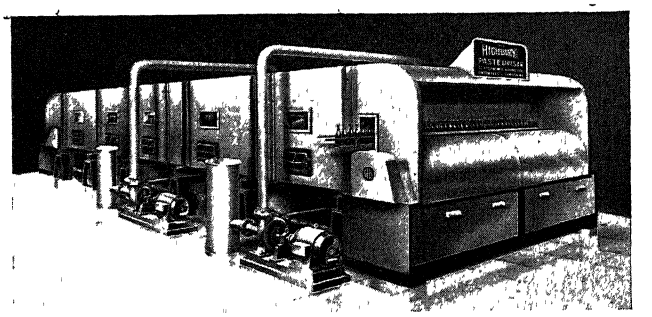
BREAD AND BAKERY PRODUCTS. There have been no basic alterations recently in the standard methods of breadmaking. There has, however, been a tendency for the number of large, completely automatic plants to increase. Present conditions of labour make it necessary to simplify the process whenever possible, and in this connexion there is an inclination to-day to discard the older sponge method and to adopt the straight-through process, in which no preliminary sponge is made, the yeast being mixed direct with the weight of flour necessary for the complete batch.

In view of this, it is not surprising that the use of yeast foods has increased, the object of these products, which consist of a mixture of salts, malt, etc., being to provide food for the yeast and so to bring about a quicker fermentation. It is doubtful whether so good a flavour to the bread is obtained as from the older methods, entailing longer fermentation.

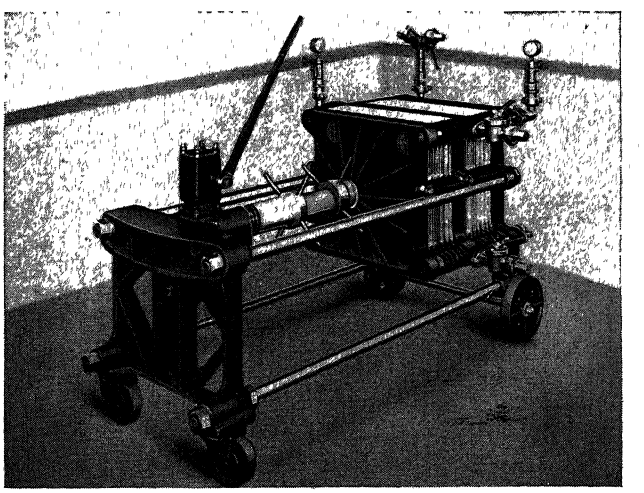
The manufacture of biscuits continues to develop in all parts of the world. For the most part the biscuits produced are of the cheaper varieties, and are made on automatic plants involving minimum labour costs. In these plants the baking is done in ovens up to 200 ft. in length, and this necessitates feeding by fast cutting machines. Under these conditions a very large output is obtained. The biscuits are baked upon endless steel bands which pass through the oven, returning underneath. On emerging from the ovens the biscuits are transferred to conveyors to cool, from which they are packed. (R. T. C.)

BREWING AND BEER. In Great Britain most brewing companies continue to expend large sums of money on the improvement or rebuilding of their licensed property, thereby rendering it more attractive to wider sections of the community. In many breweries plant has been installed for the cooling of beer in barrel before delivery to the licensed house. Many public-house cellars are now fitted with special cooling devices to maintain beer at any desired temperature. The use of stainless steel has been considerably extended for the construction of various types of brewing plant, as well as for public house cellar fittings and beer-raising apparatus.

In consequence of the large increase in the quantity of



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AUTOMATIC PASTEURISING MACHINE FOR BOTTLED BEER, WITH A CAPACITY OF 600 DOZEN BOTTLES AN HOUR



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SHEET TYPE STERILIZING FILTER FOR BOTTLED BEER, WITH HYDRAULIC RAM TO TIGHTEN THE PLATES

beer sold in bottle, many improvements have now been effected in bottling machinery. At the present time most large-scale bottling plants are so constructed that bottles may be cleansed, filled, sealed (often pasteurized) and labelled entirely automatically at rates up to and over 6,000 bottles per hour. Methods of carbonation, chilling, and cold storing are constantly being modified and improved. Especially notable have been the introduction of the sterilizing filter, the sterile filling machine, the perfection of a special system whereby beer may be conditioned, carbonated, and cold stored in the entire absence of air, thereby, it is claimed, eliminating the necessity for pasteurization, and the introduction of a method whereby large quantities of highly purified CO_2 gas may be obtained from solid CO_2 blocks.

The research department of the Institute of Brewing investigates the more complex fundamental problems underlying the brewing process. Protracted investigations are directed towards improving the quality and quantity of British brewing barley, while at the same time Empire varieties are frequently being tested for their suitability as brewing materials. Experiments are being continued to find suitable new varieties of hops to replace the imported article. At Birmingham University the research department of the Institute has a complete small-scale experimental brewery in stainless steel installed for experimental work in connexion with the various problems under investigation.

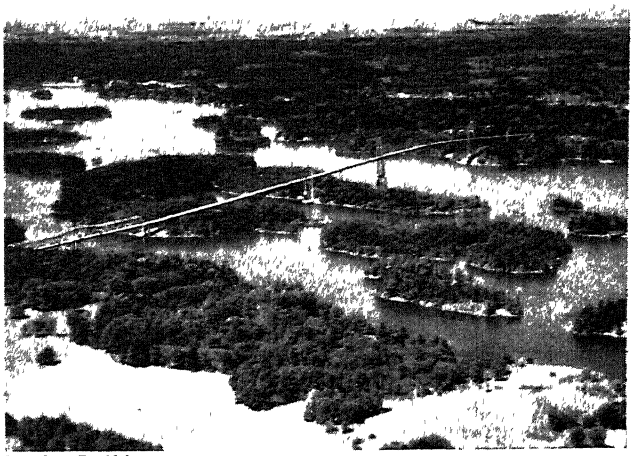
Other problems under consideration are difficult questions regarding the composition of starch, the occurrence and behaviour of proteins in wort and beer, the behaviour of yeast and its nutritional requirements including the possibility of isolating "bios", and the composition of brewing waters. All this work is now under the direction of Sir Gilbert T. Morgan, O.B.E., D.Sc., LL.D., F.R.S.

Beer production in United Kingdom (excluding Eire) for the year ending March 31, 1938, was 23,675,621 net bulk bbls. on which the net excise duty was £61,241,404. World production of beer for 1937 (the last official figures) was approximately 186 million bbls. (A. J. C. C.)

BRIDGES. In Great Britain the new Waterloo bridge made progress during 1938; the abutments and piers approached completion and much falsework was placed for span-construction. After 112 years' service, Telford's Menai (suspension road) bridge, Wales, Anglesey, was being reconstructed without, however, changing the appearance. A new (road) bridge over the Dee at Aberdeen was being built.

In the British Empire there was considerable activity in bridge building. On Nov. 14 was brought into use the Lions' Gate (road) bridge, over the Burrard Inlet, Vancouver, Canada. It is the longest suspension bridge in the Empire (1,550 ft., with a clearance above high water of 200 ft., and two smaller side-spans totalling 1,228 ft.; the whole, with approaches, 6,100 ft.). This is a toll bridge, and was built as a private venture by a British company at an estimated cost of $5,500,000.

The Thousand Islands Bridge, joining the United States and Canada across the St. Lawrence River, was officially opened by President Roosevelt and Prime Minister Mackenzie King on Aug. 18, 1938. The dedication ceremonies featured the celebration of 100 years of international peace between the two nations. This crossing, 8½ miles long, utilizes the islands to reduce the span-lengths required. It includes two suspension bridges (main spans 800 ft. and



Canadian Pacific]

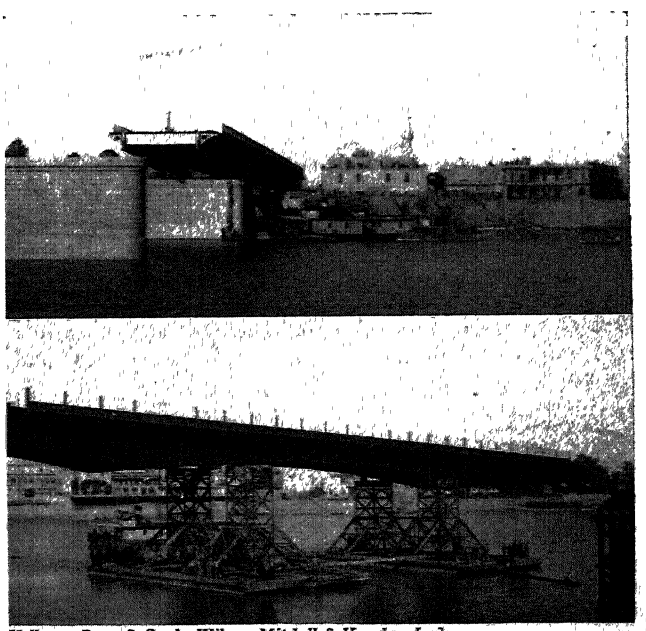
THE THOUSAND ISLANDS BRIDGE, UNITING CANADA WITH THE U.S.A., OPENED IN 1938 BY PRESIDENT ROOSEVELT AND MR. MACKENZIE KING. IN THE BACKGROUND IS THE CANADIAN MAINLAND

750 ft.), a steel arch, a continuous truss bridge, a masonry bridge, and connecting viaducts.

Another international bridge completed in 1938 was the Blue Water bridge connecting Port Huron, Mich., and Sarnia, Ont., across the St. Clair River. This is an arched cantilever of 871 ft. span.

Other Empire bridges under construction were the Howrah (road) bridge, Calcutta, India (world's third largest cantilever span, of 1,500 ft.), due for completion in the spring of 1939, and the Brisbane (road) bridge, Queensland, Australia (suspension; 1,463 ft. in three spans, the longest, 924 ft. and the clearance, 114 ft.; contract price, £1,154,000), due for completion July, 1939, but delayed. The latter will be a government-owned toll bridge, and the second longest span in Australia.

United States. Many bridges were in course of construction or of alteration during 1938. On the Henry Hudson



Holloway Bros. & Coode, Wilson, Mitchell & Vaughan-Lee]

THE FIRST SPAN FOR THE NORTH BRIDGE OVER THE RIVER TIGRIS AT BAGHDAD, WHICH WEIGHS 580 TONS, BEING FLOATED OUT AND (ABOVE) BEING LOWERED INTO POSITION ON TWO OF THE PIERS

bridge over the Harlem River at New York, opened in Dec. 1936, the addition of an upper deck to double the traffic capacity was soon found necessary, as anticipated by the engineers, and was completed in April 1938. Some 6,500,000 cars used the bridge in the first year, 11,000,000 cars in the second year, each paying a ten-cent toll; and it is expected that the twenty-year revenue bonds will be retired and the bridge will be made free in ten years. This bridge has a main span of 800 ft. Other bridges completed in 1938 include the Cairo (Illinois) bridge over the Ohio River, a multiple cantilever with 800 ft. principal span; and the Port Arthur–Orange bridge over the Neches River, Texas, a cantilever with 600 ft. span.

The Bronx-Whitestone bridge, spanning Long Island Sound, opening May 1939 in time for the New York World's Fair, is a suspension bridge with a main span of 2,300 ft.

Asia. At Baghdad, two bridges over the Tigris reached an advanced stage of construction by a British firm.

In August it was reported that the Chientang double-deck road-rail bridge near Hangchow, China (opened in Nov. 1937), had been destroyed by retreating Chinese forces.

Europe. The largest bridge project now in hand, involving 200,000 tons of steel, is the "Tor der Welt", over the Elbe at Hamburg, to be completed about 1946. This is a suspension bridge with a main span of 2,296 ft., carrying a roadway 154 ft. wide on the upper deck and trains below. The Köhlbrand approach includes a continuous girder span of 854 ft., using four double-web plate girders 33 ft. deep.

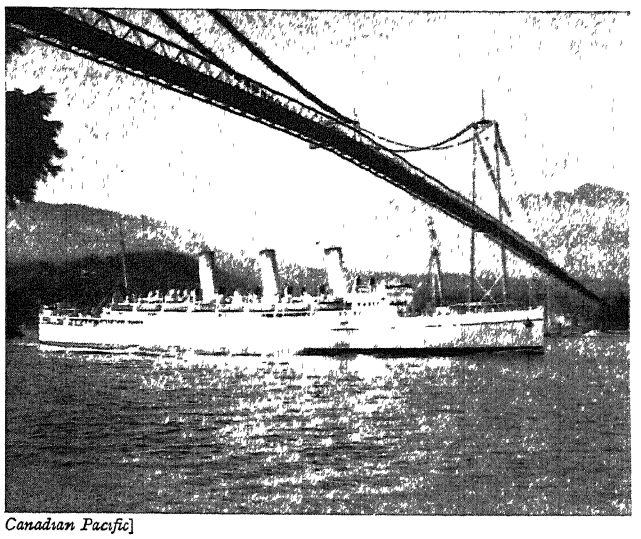
The year 1938 was marked by two notable bridge failures. The international Falls View bridge at Niagara Falls, after forty years of service, was carried away on Jan. 27 by an ice jam of unprecedented height. On March 14, a new welded bridge of the Vierendeel truss type at Hasselt, Belgium, suddenly collapsed; the failure is attributed to the application of welding to steel of excessive carbon content.

BRITISH ARMY: *see* ARMY, BRITISH.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. The annual meeting for 1938 was held in Cambridge (Aug. 17–24). The attendance of members, as was to be expected in this university town, was above the average: nearly 3,000 were present, and that number would have been exceeded but for the fact that the Section of Physiology did not meet, as the date clashed with an International Physiological Congress in Zürich. On the other hand, the accommodation for meetings offered by Cambridge, in lecture rooms, laboratories, and other university institutions, was so unusually ample that some of the Sections were able to organize themselves in two or three departments, and the number of scientific communications was above the usual large figure, amounting to more than 500. The president of the Association was Lord Rayleigh, F.R.S., whose father occupied the same chair in 1884. Lord Rayleigh dealt, in the first part of his presidential address, with vision in nature and vision aided by science, and in the second part with science and warfare: it is to be hoped that in this second part he disposed finally of any belief that the progress of science can be held directly responsible for the horrors of war. Among addresses delivered by presidents of Sections, reference may be made, on the score of their wide interests, to Prof. Griffith Taylor's on geographical correlations and culture, Prof. R. V. Southwell's on the changing outlook of engineering science, Mr. J. Sargent's on the function of administration in public education, and Prof. R. G. Stapledon's on ley farming; while the Earl of Onslow spoke on national parks to the delegates of societies in correspondence with the Association. Among other leading subjects of discussions and papers were the water supply of London, the biology of British food fishes, the growth of health resorts, English ports in their geographical setting, government storage of foodstuffs, unemployment and trade cycles, the educational significance of the cinema and broadcasting, problems of British forestry, agriculture and national employment, the remains of prehistoric man recently discovered at Swanscombe, the mechanism of evolution, and virus diseases of plants.

The wide public interest of many of these subjects is evident, and there were many other such in the programme. Nor has this aspect of the advancement of science ever been neglected by the Association. Nevertheless, for some years there has been a growing belief that the social relations of science demand close and objective study in increasing measure, and a more systematic and widespread presentation to the public. This consideration led the Association to take, at the Cambridge meeting, a decision which may well prove to be one of the most important in its history, namely, to create a new division to deal with the social and international relations of science. The functions of this division are to arrange meetings at the time and place of the annual meetings of the Association, and also elsewhere at other times as occasion may arise; to co-ordinate work dealing with the social relations of science, both at home and abroad; to act in a consultative capacity, and to supply information to organizations, individuals, and the public; to initiate and carry out inquiries and research, and to secure publication of the results thereof. Closer contacts with scientific organizations in other countries are among the objects of the new division implicit in its title; and in this connexion it should be recorded that the Cambridge meeting gave occasion for full discussion between officers of the British Association and a representative delegation from the American Association for the Advancement of Science, on the subject of strengthening the bonds between these two bodies, already closely united by community of objects and methods. Proposals were formulated, and have since been ratified, for reciprocal honorary membership to be extended to certain groups of executive members, and for a regular interchange of lecturers at alternate meetings in Britain and America. (O. J. R. H.)

BRITISH COLUMBIA. The opening of the year saw Canada's westernmost province visited by the Rowell Commission on Dominion-Provincial relationships. It was a visit which aroused considerable controversy, for 32 associated boards of trade told the commissioners that the best remedy for Canada's ills would be the abolition of provincial governments and legislatures. Mr. Pattullo, head of the Liberal Cabinet, however, suggested a reallocation of revenues between the province and the Dominion, a review of provincial debts, and the assumption by the Dominion of responsibility for unemployment relief. Broadcasting in March, after the commission left, he advocated the exclusion of the Japanese from British Columbia, beginning with the expulsion of the large number who were claimed recently to have entered illegally, and the annexation of Yukon to the province. He also undertook to support in Ottawa the speedy starting of the Alaska Highway, which has had an immense advertisement in the United States and will run from the State of Washington through British Columbia and Yukon to Alaska. The building of the road, Mr. Pattullo declared, would solve the province's unemployment for years ahead, and an appro-



Canadian Pacific]

THE C.P TRANS-PACIFIC LINER "EMPRESS OF ASIA" PASSING BENEATH THE LIONS' GATE BRIDGE OVER THE BURRARD INLET, VANCOUVER, COMPLETED 1938

priation for surveys for it was later made in the provincial budget.

There were some weeks of disturbances in June and July when a body of unemployed occupied public buildings in Vancouver and Victoria. July saw, on Vancouver Island, the worst forest fire since white men came to British Columbia. The new provincial budget, introduced in November, looked for a revenue even larger than the previous year's record of $31 millions; relief expenditure was put down at $5 millions. In Dec. an amendment to the Provincial income-tax law, to permit a 15 per cent tax on undistributed profits, was introduced in the Legislative Assembly and met with some opposition from business circles.

Area and Population:
Area 366,255 sq. miles.
Population (est. 1937) 751,000 (Chinese 27,139; Japanese 22,205; Indians 24,599).
Chief Towns (pop. 1931 census). Vancouver (246,593). Victoria (39,082); New Westminster (17,524).

Premier. Hon. T. D. Pattullo, K.C., LL.D.

Production:

Field crops (1937)	$16,592,000
Dairy produce (1937)	$9,465,800
Fisheries (1936)	$17,231,534

Minerals (1936) $54,407,036 (bismuth, 360,613 lb.; cadmium, 526,034 lb.; copper, 21,169,343 lb.; gold, 451,938 fine oz.; lead, 376,645,367 lb.; silver, 9,748,715 fine oz.; zinc, 255,668,574 lb.; coal, 1,489,171 tons).

Water Power (Jan. 1, 1938) developed . 719,972 h.p.

Manufacturing Industry 1936 (incl. Yukon):
Establishments, 1,695; capital, $250,686,403; employees, 39,796; gross value of output, $216,136,078.

Communications and Transport:
Roads (Mar. 31, 1937) total 23,037 miles (earth 13,427 miles).
Railways (Dec. 31, 1936) . . . 3,907 miles
Motor vehicles licensed (Dec. 31, 1937) cars, 78,999; commercial, 17,570; buses 298; cycles 1,544.

Finance:

Revenue, ordinary (1937–38)	$31,036,943
Expenditure, ordinary (1937–38)	$26,672,043
Debt, gross (Oct. 1, 1938)	$186,424,198

Education:
Controlled schools (1936) scholars . . 116,722

BRITISH COMMONWEALTH RELATIONS CONFERENCE. The second unofficial British Commonwealth Relations Conference was held at Sydney, N.S.W., Australia, between Sept. 3 and Sept. 17, 1938. The first such Conference had been held at Toronto, Canada, in 1933. The Conference was summoned and organized by the Royal Institute of International Affairs and its sister institutes in the Dominions (except Ireland) and India. The following were the heads of the delegations to the Sydney Conference: United Kingdom, the Marquess of Lothian, C.H.; Australia, the Hon. Mr. F. W. Eggleston; Canada, Mr. E. J. Tarr, K.C.; India, Pandit H. N. Kunzru; Ireland, Mr. Donal O'Sullivan; New Zealand, the Hon. W. Downie Stewart; Union of South Africa, Major P. G. van der Byl. The United Kingdom delegation included a representative of Newfoundland. The Chairman of the Conference was Sir Thomas Bavin, formerly Premier of New South Wales, and the other principal officers were: Vice-Chairman, Mr. David Maughan, K.C.; Secretary, Mr. Ivison Macadam, C.B.E.; Recorder, Mr. H. V. Hodson.

The agenda, which had been prepared in June 1937 by a committee under the chairmanship of Viscount Samuel, G.C.B., opened with a study of the national interests and outlooks of the individual nations of the Commonwealth. The central problem of British Commonwealth relations, as a note to the agenda pointed out, was no longer that of adjusting the constitutional relations of the Dominions with Great Britain, but that of attaining the maximum of mutually advantageous co-operation among a number of autonomous and equal nations. The problems of those several nations, it was contended, were in many ways distinct, and upon their respective interests would largely depend the nature and degree of co-operation desirable between them. The majority of participating Institutes presented written studies of the various aspects of their national interests and policies, and a number of the most important of these documents have been published. Having given further oral consideration to these separate national interests, the Conference divided the rest of its agenda into three parts, namely, economic policies and the nature of co-operation to be applied to them, the political and strategic aspects of external policies, and "the future of the Commonwealth as a co-operative organization". The Conference did not attempt to deal with technical economic questions: the emphasis in this section of its agenda was on the character of the economic problem as a vital element in the whole complex of international relations. The discussion on foreign policy and defence was designed to bring out similarities and divergences of interests and policy in different areas or over different issues. This would help to answer the question, to what extent should Commonwealth co-operation be uniform and comprehensive, to what extent based on group or bilateral understandings within the Commonwealth; and to elucidate the practical possibilities of co-operation in various directions. Under the final part of the agenda the following question was posed: whether there emerged from the discussions any fresh conception of the Commonwealth arising from a re-assessment of the historical and constitutional factors in the light of the present interests and national composition of the individual member nations.

The Conference was entirely unofficial and private and, like the participating Institutes themselves, was precluded by its rules from expressing any corporate opinion on the subjects under discussion, either unanimously or by a majority vote. A full record of the Proceedings, however, including the reports of the recorders of the Conference Commissions and of the whole Conference, has been published (by the Oxford University Press) under the title *The British Commonwealth and the Future*. (H. V. H.)

BRITISH EMPIRE. The British Empire is made up of a number of units differing widely from one another in the method of government and the degree of control exercised from Whitehall. It consists of the United Kingdom comprising Great Britain and Northern Ireland; the self-governing dominions, Australia, Canada, Eire, New Zealand, and the Union of South Africa; India and Burma, to which new constitutions with a large measure of self-government have been granted; the self-governing colony of Southern Rhodesia; the crown colonies, in which the measure of control by the Colonial Office varies considerably according to local conditions; the protectorates, mainly native areas, in which the tribes are encouraged to develop along their own lines; and the mandated territories, entrusted to Great Britain or a particular Dominion by the League of Nations according to the Versailles Treaty.

AREAS, POPULATIONS, AND GOVERNMENTS

COUNTRY	AREA Sq. miles (approx.)	POPULATION* (000's omitted)	CAPITAL	STATUS	GOVERNORS AND PREMIERS
EUROPE					
GREAT BRITAIN AND NORTHERN IRELAND	93,991	47,187	London	kingdom	King: George VI. *Prime Minister* of Great Britain: Rt. Hon. Neville Chamberlain, P.C. Governor of Northern Ireland: The Duke of Abercorn, K.G., K.P. *Prime Minister* of Northern Ireland: Rt. Hon. Viscount Craigavon, D L.M., M.P.
CHANNEL ISLANDS	75	96	St. Helier / St. Peter Port	kingdom of Great Britain and N. Ireland	*Jersey:* Maj.-Gen. Sir H. de C. Martelli, K.B.E. *Guernsey:* Maj.-Gen. Sir E. Broadbent, K.B.E., C B., C.M.G., D S.O.
EIRE	26,601	2,954	Dublin	dominion	President. Dr. Douglas Hyde. *Prime Minister:* Eamon de Valera, LL.D.
GIBRALTAR	2	16	Gibraltar	colony	Gen. Sir W. E Ironside, G C.B.
ISLE OF MAN	227	49	Douglas	kingdom of Great Britain and N. Ireland	Vice-Adm. Hon. W. S. Leveson-Gower, C B, D.S.O.
MALTA	122	262	Valletta	colony	Gen. Sir C. Bonham Carter, K.C.B.
ASIA					
ADEN, PERIM, ETC.	80	51	Aden	colony	Lt.-Col Sir B. R. Reilly, K.C.M.G.
ADEN PROTECTORATE	112,000	600	—	protectorate	
BAHREIN ISLANDS	213	120	Manama	protectorate	Ruler: H.H. Shaikh Sir Hamad bin 'Isa al Khalifah, K.C.S.I.
BORNEO:					
STATE OF NORTH BORNEO	29,500	299	Sandakan	protectorate	C. R. Smith.
BRUNEI	2,226	36	Brunei	protectorate	T. F. Carey (Brit. Res.).
SARAWAK	50,000	450	Kuching	protectorate	Rajah: H.H. Sir Charles Vyner Brooke, G.C.M.G.
BURMA	261,000	15,600	Rangoon	Member of the British Commonwealth of Nations	Hon. Sir. A. D. Cochrane, K.C.S.I.
CEYLON	25,332	5,678	Colombo	colony	Sir A. Caldecott, K.C.M.G.
CYPRUS	3,572	369	Nicosia	colony	Sir H. R. Palmer, K.C.M.G.
HONG KONG	391	988	Victoria	colony	Sir G. A. S. Northcote, K.C.M.G.
INDIAN EMPIRE	1,575,185	358,600	Delhi	Member of the British Commonwealth of Nations	Emperor of India: H.I.M. George VI. *Secretary of State:* Marquess of Zetland, G.C.S.I., G.C.I.E. *Viceroy and Governor-General:* Marquess of Linlithgow, P.C., K.T., G.M.S.I., G.M.I.E., O.B.E.
MALAYA:					
STRAITS SETTLEMENTS	1,357	1,199	Singapore	colony	Sir T. S. W. Thomas, G.C.M.G.
FEDERATED MALAY STATES	27,700	1,848	—	protectorates	The Rulers of Perak, Selangor, Negri Sembilan, and Pahang.
UNFEDERATED MALAY STATES	24,347	1,774	—	protectorates	The Rulers of Johore, Kedah, Perlis, Kelantan, Trengganu, and Brunei.
PALESTINE	10,100	1,360	Jerusalem	mandated territory	Sir H. A. MacMichael, K.C.M.G., High Commissioner.
TRANSJORDAN	34,740	300	Amman	mandated territory	Ruler: Emir H.H. Abdullah ibn Hussein, G.C.M.G., G.B.E.

* Estimates, Dec. 31, 1936.

Country	Area Sq. miles (approx.)	Population * (000's omitted)	Capital	Status	Governors and Premiers
AFRICA					
Kenya	224,960	3,262	Nairobi	colony and protectorate	Air Chief-Marshal Sir R. Brooke-Popham, G.C.V.O.
Uganda	93,981	3,687	Entebbe	protectorate	Sir P. Euen Mitchell, K.G.M.G.
Zanzibar	1,020	243	Zanzibar	colony and protectorate	J. H. Hall, C.M.G. (Brit. Res.).
Nyasaland	47,949	1,623	Blantyre	protectorate	Sir H. Kittermaster, K.C.M.G.
Tanganyika	360,000	5,188	Dar-es-Salaam	mandated territory	Sir M A. Young, K.C M.G.
Northern Rhodesia	290,323	1,378	Lusaka	colony	Sir J. A. Maybin, K C.M.G.
Somaliland	68,000	347	Berbera	protectorate	Maj. Sir A. S. Lawrance, K.C.M.G.
Seychelles	156	30	Victoria	colony	Sir A. F. Grimble, K.C.M.G.
Mauritius	809	411	Port Louis	colony	Hon. Sir Bede Clifford, K.C.M.G.
Southern Rhodesia	152,000	1,300	Salisbury	self-governing colony	Sir H. J. Stanley, G.C.M.G. *Prime Minister:* The Hon. G. M. Huggins, F.R.C.S., M P.
Union of South Africa.	472,550	9,707	Seat of Government, Pretoria Seat of legislature, Capetown	dominion	Rt. Hon. Sir P. Duncan, G.C.M.G. *Premier:* Gen. the Hon. J. B. M. Hertzog.
South-West Africa	317,725	360	Windhoek	mandated territory	Administrator: Dr. D. G. Conradie.
Basutoland	11,716	562	Maseru	colony	Sir W. H. Clark, G.C.M.G.
Bechuanaland	275,000	266	Mafeking, in Cape Province	protectorate	Sir W. H. Clark, G.C.M.G.
Swaziland	6,705	153	Mbabane	protectorate	Sir W. H. Clark, G.C.M.G.
Anglo-Egyptian Sudan	967,500	5,946	Khartoum	condominium	Lt.-Col. Sir G. S Symes, G.C.B.
Nigeria, including British Cameroons	372,599	19,365	Lagos	colony and protectorate mandated territory	Sir B. H. Bourdillon, G.C.M.G.
Gambia	4,069	191	Bathurst	colony	Sir W T. Southorn, K.C.M G.
Gold Coast including British Togoland	91,843	3,614	Accra	colony and protectorate mandated territory	Sir A. W Hodson, K.C.M G.
Sierra Leone	27,925	1,920	Freetown	colony and protectorate	Sir D. J. Jardine, K.C.M.G.
St. Helena and Ascension	81	4	Jamestown	colony	Henry Guy Pilling, C.M.G.
AMERICA					
Bahamas	4,375	66	Nassau	colony	The Hon Sir C. C. F. Dundas, K.C.M G.
Barbados	166	188	Bridgetown	colony	E. J. Waddington, C.M.G.
Bermudas	19	31	Hamilton	colony	Gen. Sir R. J. T. Hildyard, K.C.B.
British Guiana	89,500	333	Georgetown	colony	Sir W. E. F. Jackson, K.C.M.G.
British Honduras	8,598	56	Belize	colony	Sir A. C. M. Burns, K.C.M.G.
Canada	3,729,665	11,080	Ottawa	dominion	The Lord Tweedsmuir, P.C., G.C.M.G., C.H. *Premier:* Rt. Hon. W. L. Mackenzie King, C.M.G.
Falkland Islands and Dependencies	4,618	2	Port Stanley	colony	Sir H. Henniker-Heaton, K.C.M.G.
Jamaica and Dependencies	4,710	1,151	Kingston	colony	Sir A. F. Richards, K.C.M.G.
Leeward Islands (Antigua, Dominica, Montserrat, the Virgin Islands, St. Kitts-Nevis)	725	140	St. John (Antigua)	colony	Sir G. J. Lethem, K.C.M.G.
Newfoundland and Labrador	*c.*152,000	293	St. John's	colony, constitution suspended	Vice-Adm. Sir H. T. Walwyn, K.C.S.I.
Trinidad and Tobago	1,980	448	Port of Spain	colony	Maj. Sir H. W. Young, K.C.M.G.
Windward Islands (Grenada, St. Vincent, St.Lucia)	521	210	St. George's (Grenada)	colony	Sir H. B. Popham, K C.M.G.
OCEANIA					
Commonwealth of Australia	2,974,581	6,807	Canberra	dominion	Brig.-Gen. Lord Gowrie, V.C., P.C., G.C.M.G., C.B., D.S.O. *Premier:* Rt. Hon. Joseph Lyons, P.C., C.H.
Fiji	7,055	201	Suva	colony	Sir H. C. Luke, K.C.M.G.
New Zealand	103,415	1,585	Wellington	dominion	Viscount Galway, P.C., G.C.M.G. *Premier:* Rt. Hon. M. J. Savage, P.C.
Papua	90,540	277	Port Moresby	part of Commonwealth of Australia	Sir H. Murray, K.C.M.G.
Pacific Islands	1,911	161	—	colonies and protectorates	Sir H. C Luke, K.C.M.G.
New Hebrides	5,700	60	Vila	condominium	Sir H. C. Luke, K.C.M.G.
New Guinea, Territory of	93,000	550	Rabaul	mandated territory	Brig.-Gen. W. Ramsay McNicoll, C.B., C.M.G., D.S.O.
Western Samoa	1,133	56	Apia	mandated territory	Rt. Hon. M. J. Savage, P.C.
Nauru	8	3	—	mandated territory	Commander R. C. Garsia, R.A.N.

* Estimates, Dec. 31, 1936.

BRITISH GUIANA. In May 1938 was celebrated the centenary of the first arrival in this Colony of East Indian immigrants, whose descendants and successors now number 143,000. Mr. G. D. Owen, Colonial Secretary, arrived in September, when the Colonial Office Labour Adviser also came to study economic conditions.

Certain estates, on which industrial unrest had developed in the summer, were declared "proclaimed areas". The Colony exported its full quota, 186,000 tons, under the International Sugar Agreement. Wages of field and factory workers were increased from 10 to 25 per cent. Fixation of rice export prices was discontinued but subsequently reimposed. Conditions in the industry were investigated by an expert from the Federated Malay States. There was continued expansion of the bauxite industry. A scheme to assist gold prospectors was sanctioned. An extensive artesian well-drilling scheme, started in 1914 and costing 1¼ million dollars, was completed. In July the Governor appointed a strong local committee to report on the development of the hinterland. (A. A.)

Area and Population :
Area 89,500 sq. miles.
Population (Dec. 31, 1936) 332,898 (Europeans 10,761).
Chief Towns : Georgetown (66,601), New Amsterdam (9,514).
Governor. Sir Wilfred E. F. Jackson, K.C.M.G.
Production 1937 (Export figures) :

Sugar	$7,608,106 (181,574 tons)	Rum	$520,563
Molasses	$297,226	Gold	39,047 oz.
Diamonds	34,566 carats	Bauxite	300,707 tons

Overseas Trade 1938 :

Imports	$10,610,262
Exports, domestic	$13,065,606

Communications 1937 :
Roads : 384 miles of fair surface for motors.
Railways : 79 miles ; 107,012 tons of freight carried.
Finance 1938 :

Revenue	$5,755,689	Expenditure	$5,714,464
Public Debt (Dec. 31, 1937)			£4,525,684
Currency	Accounts kept in dollars		$1 = 4s. 2d.

Education 1937 :
Elementary : 7 Government schools, 2,132 scholars ; 229 aided schools, 48,945 scholars.

BRITISH HONDURAS. Lord Moyne, chairman, and four members of the West Indies Royal Commission, spent from Nov. 25 to Dec. 10, 1938 in this Colony, taking evidence from representative bodies and individuals. A tour of inspection was made in November by the Labour Adviser to the Colonial Office.

Improvement in trade continued. Exports of mahogany, chicle, citrus fruits, and coco-nuts increased. The output of grapefruit, 58,000 boxes, doubled that of 1937. Bananas were adversely affected by weather and other conditions. The revival of the sugar industry in the north progressed. In Stann Creek valley the first commercial factory for cassava starch in the British Empire (outside Malaya) started work in December with an anticipated output of 2,500 tons a year.

The Town Board of Belize was dissolved in January, its work being carried on by three government officials pending the setting up of a new Board in January, 1939.

An amendment to the Constitution provided an additional member of the Legislative Council to give separate representation to Toledo. (A. A.)

Area and Population :
Area 8,598 sq. miles.
Population (est. Dec. 31, 1936) 56,071.
Chief Town, Belize (pop. 1936, 21,683).
Governor. Sir Alan C. Maxwell Burns, K.C.M.G.
Language. English mainly (25 per cent Spanish).
Production 1937 (Export figures) :

Mahogany logs and lumber	$715,786
Cedar logs and lumber	$19,004
Grape fruit, fresh	$31,430
" " canned	$4,663
" " juice	$140
Chicle	$189,186
Bananas	$330,491
Factory output (1937) :	
Sugar	416 tons
Cigarettes	13,527,200

Overseas Trade 1937 :

Imports	$3,981,249
Exports	$2,602,600
Re-exports	$1,179,780

Communications :

Roads	170 miles open to motor traffic.
Railways	25 miles (3-ft. gauge).

Finance 1938 :
Revenue, $1,092,179 ; Expenditure, $1,250,495.
Public Debt (Dec. 31, 1936) $3,138,188
Currency Dollar ($1)=$1 00 U.S.A.
Education 1936 :
Elementary : schools, 86 ; scholars, 8,916.
Secondary : " 4 ; " 395.

BRITISH LEGION, THE, founded in 1921 by the first Earl Haig to foster the interests of British ex-service-men, now has a membership estimated at over half a million, organized in 4,367 branches, with a women's section (comprising female relatives of members) of 1,800 branches supplying an invaluable complement to its benevolent work. This section maintains, at Burnham Hall, Norfolk, a training school, chiefly for domestic servants.

Among the centrally controlled organizations are : the Poppy Factory at Richmond, Surrey, employing an average of 380 badly disabled men in the manufacture of the 44,000,000 poppies required each Armistice Day ; the Sanatorium and Settlement at Preston Hall, Maidstone (a self-contained village of over 1,000 persons), where is provided the most up-to-date treatment and care of tuberculous cases ; the Pension Fund, which provides 2,000 pensions of 10s. a week for men over fifty years of age who are broken in health and not otherwise pensioned ; the Disabled Men's Sales, which collects and markets goods made by war-disabled men in all parts of the country ; and the Employment Department, which for some years has found jobs for about 40,000 men annually, and has also formed car-parking organizations in many districts and has a training school for taxi-drivers. A separate Officers' Benevolent Department, dealing with necessitous officers and their dependants, assisted some 7,800 cases during 1938.

The year has been marked by continued fraternization with similar organizations in ex-enemy countries (early in September two German generals were admitted to membership), and especially by its offer, early in October—immediately accepted by both the British and the German authorities—to undertake police duties in what were to have been the plebiscite areas of Czechoslovakia. A force of 1,200 picked men under the command of the Chairman, Major Sir Francis Fetherston-Godley, O.B.E., was mobilized, and within three days, starting from nothing, a disciplined, orderly, cohesive body, paid, clothed, and equipped at government expense and furnished with motor transport, motor-cycle corps, ambulances, etc., was ready to sail for service in Central Europe, a hitherto quite unparalleled achievement. After a few days at Olympia, London, they embarked on two troopships at Tilbury ; but on Oct. 15, their services being not, after all, required, they were disbanded. (L. H. D.)

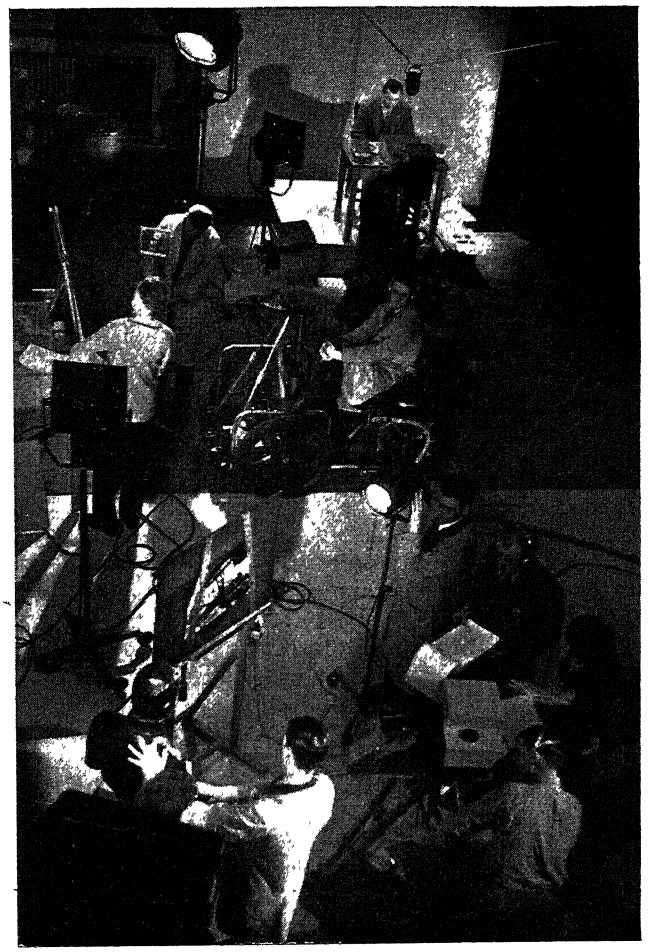
foreign language news services were inaugurated during the year: Arabic, for reception in the Near and Middle East, Jan 3; Spanish and Portuguese, for reception in Latin-America, March 15; French, German, and Italian, for European reception, Sept. 27.

A large number of special broadcasts were arranged for both home and overseas services during the international crisis in September. For example, there were extra news bulletins daily, and many special announcements were made at the request of government departments and various public organizations. Immediate summaries of Herr Hitler's Nuremberg and Berlin speeches were broadcast. Each of the speeches which Mr. Chamberlain made at Heston, before and after his three visits to Germany, were recorded on the spot (by the B.B.C.'s mobile recording unit), and reproduced later in the news bulletins; the speeches made on his return from the three visits were also broadcast "live"; scenes at Heston were successfully televised on two occasions. The prime minister's talk from Downing Street on the night of Sept 27 was broadcast on long, medium, and short waves, and was relayed by a number of foreign broadcasting organizations. It is understood that President Roosevelt and his Ministers listened to it during the course of a meeting at the White House.

Speeches by His Majesty King George VI were broadcast on the occasions of the gathering of delegates of the National Fitness Council at the Guildhall, London; the opening of the Empire Exhibition at Glasgow; and the unveiling of the Australian War Memorial at Villers-Bretonneux. Other aspects of the royal visit to France, and the visit which their Majesties paid to Lancashire earlier in the year, formed the subject of special programmes. The Queen's speech at the launching of the Cunard White Star liner "Queen Elizabeth" was broadcast from Clydebank, when listeners also heard a description of the ceremony.

In the sphere of music—as, indeed, in other spheres of programme activity—the B B C. continued to perform the dual role of purveyor of entertainment and patron of the arts. British broadcasting in 1938 maintained on a permanent contract basis more than 400 orchestral musicians in its Symphony Orchestra and other orchestras in London and the provinces. Its contribution to the London concert world included the B.B.C. Symphony Concerts during the winter season, the summer Promenade Concerts, and the London Music Festival. Toscanini again conducted at the Festival. The B.B.C. continued to collaborate with the leading orchestral and choral societies, both in London and the provinces, and also with the Royal Covent Garden Opera Company.

Numerous plays, either written specially for broadcasting or adapted from stage successes, were broadcast during the year. The "Experimental Hour" provided a platform for new and adventurous forms of writing and technique, while the classics were performed regularly in the "World Theatre" series. Dramatic "feature programmes" dealt with such varied subjects as the Spanish Armada, progress in aviation, legendary monsters, the coal industry, the Franco-Prussian War of 1870, the history of advertising, and the Scottish countryside. Light music and variety, both from B.B.C. studios and music halls and cinemas throughout the country, figured largely in the programmes. Talks and discussions covered topics of every kind, but particular attention was paid to events and movements of the day; notable contributions in this field were series dealing with "The Mediterranean", "Everyman and the Crisis", "The Way of Peace", and "Efficiency and Liberty." The broadcasting of Sunday and weekday services from churches and the studio continued. The major sporting events of the year were broadcast as usual; the number of commentaries on horse-racing increased, and the England *v.* Australia Test Matches were treated even more fully than in the past.



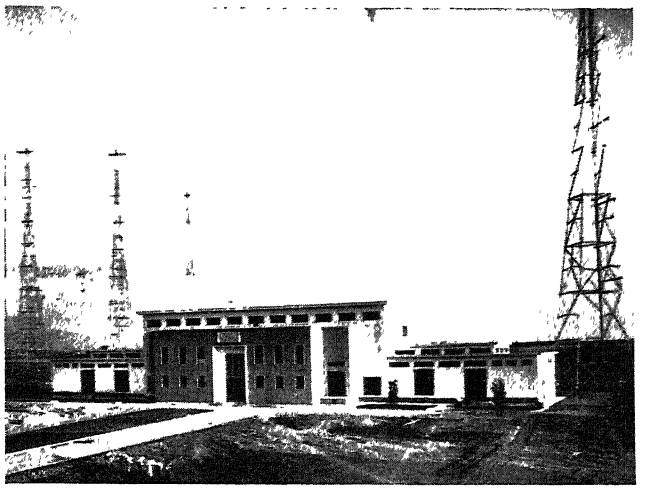
British Broadcasting Corporation]
J. F. HORRABIN AND PROFESSOR W. J. ROSE IN A TELEVISION BROADCAST OF NEWS MAP NO. 7—POLAND—AT ALEXANDRA PALACE, LONDON

The number of schools recorded as listening to the B.B.C.'s special service of School Broadcasts grew in number during the year from 6,890 to 8,453 in England, Wales, and Northern Ireland, and from 881 to 1,141 in Scotland. During the spring some 700 adult Wireless Discussion Groups followed one or other of the current series of talks: for example, the talks on "The Way of Peace", referred to above, attracted 461 groups.

The total amount subscribed to charity by listeners in response to the "Week's Good Cause" appeals, broadcast on Sundays, was over £168,000. In addition, substantial amounts were raised through "emergency" appeals on weekdays (*e.g.* Lord Baldwin's appeal for Jewish and non-Aryan Christian Refugees from Germany). S.O.S. and police messages broadcast from all transmitters during 1938 reached a total of 1,248 as compared with 1,213 during the previous year. Forty-nine per cent of this total were successful.

The short-wave transmissions of the Empire service (as distinct from the foreign language services) continued to fill about eighteen hours a day.

Europe. The year 1938 was one which showed to the full the importance of broadcasting as a link between the



Keystone]
THE NEW ITALIAN SHORT-WAVE TRANSMITTER AT PRATO SMERALDO, NEAR ROME

peoples of Europe. There was a considerable increase in foreign language transmissions—both on medium and short waves—particularly with regard to foreign language news bulletins For instance, both France and Italy extended their foreign news services. British development in this field has been referred to earlier.

Co-operation between the various broadcasting organizations was a marked feature of the year, and the following programmes are examples of the many broadcasts that had a European, and sometimes a world-wide, audience: Concerts from the London Music Festival, conducted by Arturo Toscanini, in May and June; the Sokol Festival in Czechoslovakia, on July 4 and 5; concerts from the Lucerne International Music Festival, in August and September; the Jubilee of Queen Wilhelmina of Holland, Sept 5; and Herr Hitler's speech on the Sudeten German question, Sept. 12. In addition, special international relays were organized by a number of countries in celebration of Christmas and the New Year.

During the year, Greece and Albania started broadcasting services, and Turkey reorganized its service and opened a high-power station in October.

At the end of 1938, Denmark had the highest proportion of wireless licences per head of population in Europe, being followed by Sweden, Great Britain, and Germany. Statistics of the actual number of wireless licences up to the end of Nov. 1938, show the first six European countries to be as follows: Germany, 11,048,261; Great Britain, 8,870,700; France, 4,640,878; Sweden, 1,174,069 (to end of September); Belgium, 1,111,942 (to end of October); Italy, 985,000.

On the technical side, the quinquennial meeting of the International Telecommunications Union was held at Cairo between Jan. 31 and April 8. The conference revised the Radio-communications Regulations laid down by the previous conference held at Madrid in 1932. The principal changes in the waveband allocations to broadcasting are an extension of the medium waveband in Europe up to 1,560 kc/s (down to 192·3 metres); the provision of certain wavebands between 2,000 and 5,000 kc/s for broadcasting in tropical regions; an increase of 500 kc/s for broadcasting on the short wavebands between 6,000 and 22,000 kc/s; and an allocation of ultra-short wavebands for television services in Europe. The International Broadcasting Union was charged with the task of preparing a draft revision of the Lucerne Plan for the allocation of wavelengths to European medium- and long-wave broadcasting stations. This will be considered by a conference of European Administrations in Switzerland early in 1939. (X)

United States. In 1938, for the first time in its history radio established itself as a factor in international politics. It showed national leaders that hereafter they would have to act on a stage before which sat the whole world. Thus, within a few hours after the first German troops crossed the Austrian border in March, the air waves brought eye-witness descriptions of conditions in the threatened capital, followed soon after by broadcasts not only from Vienna, but from London, Berlin, Paris, Rome, and Washington, D.C.

Such crises introduced several new radio devices and techniques. The Mutual Broadcasting System gave American listeners exact recordings of official news reports received by short-wave from all European centres. Thus Americans learned how the German, French, Czechoslovakian, and Italian governments give differing reports of the same event Although technical obstacles in the way of clear short-wave reception have been almost completely eliminated, the recorded programme had the advantage of bringing together all these reports at a definitely fixed hour, convenient for American listeners.

The Columbia Broadcasting System's "European round-up" was a parallel device. In the course of half-an-hour, switch-overs were made from Paris to London to Berlin, to Rome, to Prague for brief reports from American newspaper correspondents and the foreign representatives of the broadcasting company. This presented a balanced comprehensive picture of developments as viewed by trained American observers stationed at different key points, thus enabling the listener to choose and evaluate for himself.

The new practice of fading the foreign-language speeches for interwoven translation, while good radio showmanship, created many difficulties. Many listeners protested that the translators were biased. Until recently these speeches were broadcast in their entirety and then summarized in English. But it was found that by skilful use of the speaker's pauses and the applause periods for quick translation, the original quality and character of the speech were retained and yet the meaning was made immediately available for all listeners.

The two-way conversation combined the latest technical developments with genuine news value. Contact was established between a speaker in America and one in Prague or London. In this way answers to specific questions could be obtained, and the whole country eavesdropped on an exclusive interview. Confirmation or contradiction of certain news reports and rumours could be secured. Frequently, information thus transmitted to a foreign capital had been censored there or had not yet been received. This particular technique proved most valuable when all telegraph and broadcasting services were closed down or reserved for government use.

Another advance for democratic radio in 1938 is in the field of short-wave broadcasts. For years the totalitarian governments have flooded Latin America with their special brands of radio propaganda. In entire accord with the State Department both the National Broadcasting Company and the Columbia Broadcasting System have greatly expanded their short-wave foreign-language programmes during the past year. To-day, the American programmes directed to Latin America surpass German and Italian programmes both in the number of hours and in the more important realm of radio showmanship. N.B.C. alone broadcasts 63 hours per week to South America while the

broadcasts from Germany total only 56 hours An analysis of these hours is also significant Of N B.C.'s 63 hours, 56 are in Spanish and Portuguese, and of Germany's total of 56 only 10 per cent are in those languages. In the news broadcasts to Latin America from the United States, comment and colouring are carefully avoided. The dispatches are brief and factual, greatly enhancing their value to listeners, as compared with those having definite propaganda bias. This is also true of the news short-waved from the United States in German and Italian.

It was the realistic use of fictitious news bulletins soon after the European crisis broadcasts that startled some radio listeners into believing that an army from Mars had landed in New Jersey on a certain night in October. But the dramatization by Orson Welles and the Mercury Theatre of the old H. G. Wells' novel *War of the Worlds* did more than startle the unthinking. It brought up sharply the problem of radio censorship. Immediately after the broadcast there came a cry that such programmes should not be permitted Some newspapers, which have always resented radio as a rival, demanded closer supervision of broadcasting. Radio, they said, is getting out of hand. But the protests soon quietened down. The presidents of the three major networks forbade the further use of fictitious news flashes on dramatic programmes. Communications Commissioner T. A. Craven of New Jersey urged the "utmost caution" to avoid censorship and asserted publicly that America "does not want a spineless radio".

This case revealed the somewhat ambiguous position of the Federal Communications Commission. The law under which it was established in 1934 contains the following provision: "Nothing in this act shall be understood or construed to give the commission the power of censorship". And yet the law gives the seven members of the commission the power to "protect the public rights on the air". And it must do this according to what it conceives to be for the "public interest, convenience, and necessity". The licence of every broadcasting station is subject to renewal or revocation every six months. The commission reviews programme schedules and investigates when charges are brought against a station. A vigorous and lengthy investigation into the charge of monopoly control by the large chains is now under way.

Father Coughlin, the radio priest, created another censorship problem. Following a talk on Station WMCA in which he made statements concerning Jews, the accuracy of which was widely challenged, Donald Flamm, president of the station, demanded advance copies of future talks. When these were not furnished, the Coughlin talks were discontinued. At the close of 1938 a well-organized attempt on the part of Coughlin sympathizers to boycott the station was under way.

There has been a marked increase in the amount of serious music heard on the air, and a great improvement in the general quality of dramatic programmes. Educational series have been enhanced by experience and more alert radio showmanship. Technical improvements have been few, and popularized television seems as far away as ever.

The radio year has been eventful chiefly in demonstrating the growing importance of free and democratic broadcasting. Various European publications have admitted that at the height of the Czechoslovakian crisis only American radio listeners knew what was happening. As one result, America's traditional isolationism disappeared in so far as it was based on complete ignorance or indifference, and its place was taken by a growing consciousness of immediate vital concern in foreign affairs. (H. V. K.)

BRUNEI. A British-protected state in the island of Borneo (*q.v.*).

Area and Population:
Area *c* 2,226 sq. miles
Population (est Dec 31, 1937) 35,963 (Malays *c.* 28,960)

Production 1937:

Oil	566,908 tons
Natural gas	2,830 mill cu. ft
Coal	444 tons
Rubber	1,827 ,,
Cutch (Export)	2,333 ,,

Overseas Trade 1937:
Imports, $2,516,154; Exports, $5,553,428.
Roads. 82 miles suitable for motor traffic.
Finance 1937:
Revenue, $1,049,293, Expenditure, $653,149
Currency, Straits Dollar ($1 = 2*s.* 4*d.*).
Education 1937. Vernacular schools, 20; scholars, 1,217.

BRUSSELS. January saw Flemish students raiding Tongres prison in an attempt to release a Flemish extremist, and Rexist members provoking a fight in the Chamber and a scene in the Senate; while in August the burgomaster of Lombeek Notre Dame was superseded for joining in a Rexist demonstration. In February Mr Hoover laid tributes on the graves of King Albert and Queen Astrid, and was received by King Leopold By March aeroplanes had carried to Croydon some nine tons of gold deposited by nervous Continental Powers. On April 1, at Evère aerodrome, a stratospheric aeroplane was wrecked and the pilot killed. In May a transport company gave 67 per cent of employees bonuses and badges for careful driving Mutually (March) the Belgian and German governments and (September) the Belgian and French governments raised their legations to embassy rank. In December, Ixelles new broadcasting headquarters were opened. Floods (January) and storms (August) were destructive. (H. Fw.)

BUCK, PEARL SYDENSTRICKER (1892–), American novelist and winner of the 1938 Nobel prize for literature, was born at Hillsboro, W.Va., on June 26. The daughter of Chinese missionaries, she spent most of her childhood in Chinkiang, and learned to speak Chinese before she mastered English. She returned to the United States for her advanced education, and graduated from Randolph-Macon college in 1914. From 1921 to 1931 she taught at the University of Nanking. Her first published novel, *East Wind—West Wind* (1929), was followed by *The Young Revolutionist* (1931), *The Good Earth* (1931), *Sons* (1932), *A House Divided* (1935), *House of Earth* (1935), *The Exile* and *Fighting Angel* (1936), and *This Proud Heart* (1937). In private life she is Mrs. Richard J. Walsh.


Press Portrait Bureau]
PEARL BUCK

BUDAPEST. In May, Budapest was the scene of a Eucharistic Congress, attended by the Papal Secretary of State, eight Cardinals, 72 Archbishops, and 100,000 visitors.

Forty thousand temporary lodgings were erected. This was followed by celebrations in honour of St. Stephen, who died in 1038 His "sacred right hand" was taken in procession from Székesfehérvár to Esztergom. The St Stephen's Day celebrations on Aug. 20 were also on an unprecedented scale, the Holy Crown being exhibited for two days, a Congress being held of representatives of the four million Magyars living abroad. (C A. M.)

BUDGET. Sir John Simon was faced with a formidable task in opening his first budget Expenditure, including the self-balancing expenditure of the post office and broadcasting, was estimated to rise from £919,874,000 (actual issues in 1937–38) to £1,024,840,000 in 1938–39. These sums do not include those portions of the defence outlay which were to be met from loan. The 1937–38 estimates had provided £80 millions under this head, of which £64,867,000 had been spent, and the Chancellor now made provision for £90 millions. Even with this omission, the estimates for the defence services showed an increase of nearly £56 millions on the actual expenditure of 1937–38. Civil estimates, partly as a result of air-raid precautions, were up by £30,693,000 on a similar comparison, and the estimate for debt interest and management up by £13,767,000. Some satisfaction, however, was to be drawn from the budgetary result in 1937–38. After bringing in the margin of £10 millions which had been allowed for possible supplementary votes—a figure that was repeated in the 1938–39 budget—actual outlay had fallen short of the estimates for ordinary expenditure by £29,598,000. Of this sum, £10,544,000 represented a contribution to sinking fund from the Fixed Debt Charge. On the revenue side, ordinary receipts totalled £9,480,000 more than the estimates. The result was a surplus of £39,330,000, including the above-mentioned contribution to sinking fund; but if the expenditure met from loan is taken into account there was a true deficit of £25,537,000.

Sir John Simon's estimates of revenue on the basis of existing taxation totalled £914,400,000. The yield of income-tax was expected to rise by £21,014,000, and that of sur-tax by £4,940,000. National Defence Contribution, which had been estimated to yield £2 millions in 1937–38 and had actually yielded £1,420,000, was now estimated to yield £20 millions in its first full year. The figure for customs revenue, which was put £1,300,000 lower than in 1937–38, made allowance for the loss of £4 millions on account of special duties on produce imported from Ireland, which had been remitted under the Anglo-Irish agreement.

The Chancellor thus faced a prospective deficit of £29,998,000. In meeting this, he eschewed all temporary expedients, such as the use of the accumulated profit on the Exchange Equalization Account, that had been recommended to him, and followed instead a path of strictly orthodox finance. The greater part of the required sum was furnished by an increase of the standard rate of income-tax from 5*s.* to 5*s.* 6*d.* in the £. This was estimated to yield £22,250,000 in 1938–39 and £26,500,000 in a full year. The yield in the current year would have been roughly £28 millions but for certain concessions intended to relieve the pinch where it would be felt most keenly: the wear-and-tear allowance for industry was raised; the first £135 of taxable income was exempt from any increase of tax; and tenants were allowed to defer by three months payment of part of their liability under Schedule A (income-tax on property). In order that all classes should contribute to the sacrifices required by rearmament, the Chancellor added 2*d.* a lb. to the existing rates of duty on tea (general, 6*d.* and preferential, 4*d.*). Finally, he raised the tax on petrol and oil fuel from 8*d.* to 9*d.* a gallon, and imposed a duty of 9*d.* a gallon on power alcohol The tea duty would bring in £2,750,000 in 1938–39, and £3,250,000 in a full year; and the other duties £5,350,000 in 1938–39 and £5,675,000 in a full year. The total yield of the new taxation in 1938–39 was thus £30,350,000, leaving a final surplus of £352,000

Two other features of the budget speech need be mentioned. The Chancellor commenced a campaign against tax evasion, introducing clauses to stop certain known loopholes. He also announced that the government, without waiting for financial authorization, had accumulated reserve supplies of wheat, sugar, and whale oil sufficient to feed the population for some time in an emergency. Supplementary estimates would be required to cover this outlay

British Budget, 1938

(000's omitted)

Expenditure	Estimate 1937–38 £	Actual 1937–38 £	Estimate 1938–39 £
Interest and Management of Debt	224,000	216,233	230,000
New Sinking Fund	—	10,544	—
Other Consolidated Fund Services	11,500	12,002	12,100
Defence Votes *	198,268	197,250	253,248
Civil and Revenue Votes †	429,080	407,765	449,050
Total	862,848	833,250	944,398
Self-Balancing Expenditure and Revenue			
Post Office	72,328	72,850	76,802
Broadcasting	2,870	3,230	3,640
Revenue			
Income-tax	288,150	297,986	319,000
Sur-tax	58,000	57,060	62,000
Estate, etc. Duties	89,000	88,980	88,000
Stamps and Other Inland Revenue	30,500	25,900	25,250
National Defence Contribution	2,000	1,420	20,000
Customs	219,850	221,561	220,200
Excise	113,150	113,700	115,800
Motor Vehicle Duty	34,000	34,608	36,000
Post Office Net	11,800	10,470	8,670
Other non-tax revenue	16,650	20,000	16,080
Total	863,100	872,580	914,000

* Excluding sums to be raised by loan during the year under the Defence Loans Act.

† Excluding margins for supplementary estimates: 1937–38 £10 millions; 1938–39 £10 millions. (H. V. H.)

In spite of economy efforts, the United States budget for 1938–39 was passed unbalanced with expenditure estimated at $6,869 millions and revenue $5,919 millions. Income-tax was expected to yield more, customs duties less, but with the assistance of the social security taxes revenue was estimated at $1,000 millions more than in 1937–38. In spite of an increase in the allocation to the National Defences, expenditure was to be $600 millions lower, and the deficit thus reduced from $2,700 millions to just under $1,000 millions.

The French budget was passed at the beginning of January, 1938, but subsequent financial crises necessitated

a periodic revision of the State's finances. Initially revenue was estimated at Frs. 54,776 millions and expenditure at Frs. 54,739 millions. Receipts were to be increased by the rescinding of the Laval decree that had cut rents by ten per cent and by raising a number of minor taxes M Blum revealed in April that there was a prospective deficit of Frs 4,000 millions on the ordinary budget, quite apart from an extraordinary monetary expenditure of Frs. 15,900 millions. The remedy proposed amounted in effect to inflation combined with strict price control. Revenue was to be increased by a capital levy of 4–17 per cent and a seven per cent tax on rentes. The gold stocks were to be revalued at the new franc rate. The Reynaud plan, estimating ordinary expenditure at Frs. 64,500 millions with an extraordinary expenditure of Frs. 25,000 millions, special government relief works of Frs. 3,500 millions, and a total deficit of Frs. 51,000 millions, followed in November and amounted in effect to the budget for 1939–40.

Belgium anticipated a deficit of Frs. 1,900 millions on the ordinary budget The Crisis Tax, abolished in July 1937, was restored, raising the tax on dividends from 24 to 29 per cent. Estate duty and super-tax were raised, and a progressive tax was imposed on men escaping military service. Duties on beer, tobacco, and petrol were raised

Holland estimated the budget deficit at Fl. 61 millions Ordinary defence expenditure was up by Fl 24·5 millions, and an additional Fl. 73 millions had been earmarked for capital defence expenditure To meet this a new tax was devised, amounting to a levy of two per cent on rents, interest, wages, and profits, to be collected at source. The profits of limited companies were subject to a further eight per cent duty Revenue from this was, however, reduced by provisions to lighten the burden on large families and to prevent uneven taxation of different industries.

Switzerland estimated expenditure at 542·8 million Swiss francs and revenue at 514·8 million Swiss francs. The Crisis Tax was prolonged for one year and super-tax was increased.

Italy estimated revenue for 1938–39 at Lt. 20,596 millions, with ordinary expenditure at Lt. 23,762 millions and extraordinary expenditure Lt. 9,000 millions. This last item did not include special expenditure on defence and on Abyssinia. The minimum deficit was thus Lt. 12,273 millions.

The Polish ordinary budget was balanced at 2,447 million zlotys, one third of which was for national defence, with a special allowance of 200 million zlotys for a four years' public works plan.

The Swedish budget at Kr 1,228 millions was only Kr. 26 millions larger than in 1937. Revenue was estimated to exceed expenditure by Kr. 19 millions, but there were no changes in any of the 1937 taxes.

The Norwegian budget was estimated to balance at Kr 563·4 millions, against Kr. 532·75 millions in the previous year. In effect the year ended with a net surplus of Kr. 36·6 millions.

Denmark estimated income for the year at Kr. 466·9 millions and expenditure at Kr. 462·9 millions, but during the year both revenue and expenses increased and the two items worked out at Kr. 544·6 millions and Kr. 521·1 millions. In addition a special defence bill was voted allowing for expenditure of Kr 50 millions. (D. M. H)

BUILDING AND THE BUILDING INDUSTRY. Building is one of the largest integrated industries in Great Britain, on account of the vast amount of basic material it uses and the large amount of labour it directly or indirectly employs. Unemployment in the building industry means a serious loss in purchasing power to the trading community of the country, and a decline in economic prosperity It is of supreme importance, therefore, that activity in this key industry should be maintained consistently at the highest possible level.

Apart from unemployment, it is a matter of great importance that the operative section of any industry should be protected against involuntary interruption of work, with its consequent loss of wages. Previously, building operatives received no pay for time lost due to stoppages caused by inclement weather. It is a matter for congratulation that a scheme has now been initiated in Great Britain whereby the operatives will receive payment for time lost due to this contingency.

The building industry, during the year 1938, has witnessed the passing of the peak in the volume of building work, and there are indications of a downward trend in the curve of building activity. The decline is most pronounced in private work, possibly owing, in part, to recent world political uncertainties.

In the main it is accounted for by the decrease in the estimated value of approved plans The fall in these figures and the consequent uncertainty this produces provide urgent reasons for rapidly implementing the ministry of health's long-term scheme of public building work (now being compiled by local authorities) as an insurance against recurrent recessions in the building industry.

Factory construction tends to decline, but as an offset to this, a considerable volume of work may be anticipated from an intensification, or prolongation, of the government's rearmament programme.

Stock Exchange values have reflected the decline in the building materials industry, with the exception of certain sections, which have benefited from the increased demand arising from emergency A R.P. work.

While the demand for building from private sources may decrease, that from public sources, however, is likely to increase, resulting from the inception of a definite policy of national defence. This should involve increased building work, consequent upon a more determined attempt to provide permanent structural protection for the population, by means of permanent shelters or suitably designed buildings of a heavier type in steel frame work or reinforced concrete.

Recent preparations for the evacuation of the population from large towns, coupled with the report (recently published) of the Bressey Highways Development Survey for Greater London, has again focused public attention on the urgent need for trunk road development, which, when initiated, will demand the construction of numerous viaducts, fly-over crossings, tunnels, etc.

It should be the aim of all concerned in the building industry to dispel all fears of recession, and to direct their efforts to bringing about a sense of future security which will stimulate world trade and provide the necessary impetus for an increased volume of new building work. (N. KE.)

If the dollar volume of construction activity in the United States in 1938 proved a little larger than in 1937, it is thanks to the quickly expanded public works programme which made up for the drop in private expenditure. According to the Department of Commerce Survey of Current Business, public work during 1938 accounted for 47 per cent of the total, compared with an average of 22 per cent during the 1920–29 decade and 41 per cent in 1937.

From the standpoint of business recovery, the substantial

increase in new residential construction as the year advanced was, perhaps, the most encouraging feature. Moreover, foreclosures continued to decrease, prices of building materials refrained from rising, and a better understanding seemed to be growing of the price ranges within which effective demand for new housing exists The number of family dwelling units upon which construction has started is the greatest since 1929

This activity was stimulated by Congressional legislation early in 1938, lowering the charge for mortgage insurance by the Federal Housing Administration and permitting it to insure mortgages on small homes up to ninety per cent of their value About seventy per cent of the $650 millions in mortgages accepted for insurance during 1938 was on new houses, and over half of these were for more than eighty per cent of appraised value. The encouragement of large-scale rental projects for moderate income groups also continued. By Dec. 17, the F.H A. had insured mortgages aggregating $60,400,000 on 129 projects for 16,000 families, which are either under construction or in operation, and has commitments on 113 others involving mortgages over $47 millions.

Residential building shows great geographic variations, being most active on the Pacific coast, especially in the Los Angeles district. The districts showing the sharpest increase in family units built in 1938 over 1937 are New York and Little Rock.

BIBLIOGRAPHY. Publications of the U.S. Bureau of Labour Statistics; Bureau of Foreign and Domestic Commerce; Federal Home Loan Bank Board; Federal Housing Administration; F. W. Dodge Corporation, National Bureau of Economic Research.

BUILDING SOCIETIES. The Building Society movement, which had its origin in England (Birmingham) in 1781 and spread, very slowly, to other lands, is to-day probably the most potent thrift agency in Great Britain, if not in the whole world, some 85 per cent of the enormous assets of the societies representing the savings of the people who, through its agency, are gradually being turned into a nation of freeholders Fifteen million people have been rehoused in Great Britain since the close of the World War, and of the 3,600,000 houses built to accommodate them, 2,500,000 have been built by private enterprise, 2,000,000 of which were assisted financially by the societies, which have advanced £1,300,000,000 for the purpose. To-day, well over 1,390,000 citizens of Great Britain are buying their homes through Building Societies, and over 4,268,000 people are associated with the movement either as investors (2,082,652), depositors (793,950), or borrowers (1,391,699).

As the result of mergers the number of societies in Great Britain has shown a decline for many years. In the ten-year periods from 1890, when the number was 2,378, till 1920, they dropped as follows: 2,238, 1,690, 1,276; in 1927 they stood at 1,054, and in 1937 at 977 (of which 856 were Permanent and 121 Terminating), with assets exceeding £710,000,000. Assets increased during the year by over £53,800,000, and the volume of default was infinitesimal. Forty-four societies now have assets exceeding £3,000,000, the largest being: Halifax (£122,626,007), Abbey Road (£50,295,517), Woolwich Equitable (£37,216,067), and Leeds Permanent (£36,965,985).

As will be seen in the table below, 1937 (the last date for which full figures are available) registered a decline in advances, the first since 1932; but the net principal repayments increased by £4,200,000 to £87,144,000—63 per cent of the total advances. Since 1932 the proportion of shares to total assets decreased from 81·1 per cent to 72·9 per cent, and that of assets increased from 13·2 per cent to 19·5 per cent, suggesting that the societies had obtained funds at cheaper rates. In the twenty years 1918 to 1937 the societies lent on mortgage £1,351,000,000, and during the last five years loans were maintained at over £100,000,000 a year

Building Societies: England, Wales, and Scotland

	1913	1919	1927	1936	1937
	£000	£000	£000	£000	£000
Total Assets	65,316	77,347	223,346	656,188	710,053
Share Capital, Depositors, and Other Liabilities	61,535	72,801	211,386	621,690	671,992
Advanced on Mortgage during the year	9,131	15,841	55,887	140,310	136,800
Reserves	3,781	4,545	11,960	34,198	38,062

The second annual general meeting of the Building Societies' Association was held at Cheltenham in June, under the chairmanship of Mr. Walter Harvey, and a committee has been set up to deal with matters affecting the movement. A very successful International Congress of Building Societies, which was attended by some 200 British representatives, was held at Zürich in September. Though revision of Building Society legislation, which has remained unaltered since the Act of 1894, has repeatedly been urged, nothing has yet been done; but in May the Council of the Association decided that applications for finance for timber housing schemes are to be considered on the same basis as schemes for building with brick or other materials. (L. H. D.)

BULGARIA. Early in the year there was considerable excitement owing to the continuance of the authoritarian regime. In March elections—the first since the constitution was suspended in 1934—returned 104 government supporters against 56 of the opposition, three of whom were subsequently disqualified. On May 23, parliament was opened, and the Decree-Laws of the last four years confirmed. On Oct 16 many members of the Zveno group and left-wing Agrarians were arrested, following the assassination of General Peeff, chief of the general staff. On Nov. 9 the government was defeated, and reconstructed on Nov. 14, M. Kiosse-Ivanov remaining premier.



P. Popper]
GATHERING THE ROSE CROP IN THE ROSE VALLEY IN CENTRAL BULGARIA, FOR DISTILLING ATTAR OF ROSES



J. Allan Cash

THE BYZANTINE COURTYARD OF RILA MONASTERY, BULGARIA

The most important event in foreign affairs was the signature of the Salonica Agreement with the Balkan Entente (July 31) The latter renounced, so far as they were concerned, the clauses of the Treaty of Neuilly limiting Bulgaria's armaments, as also the clauses of the Treaty of Lausanne demilitarizing certain zones on Bulgaria's frontiers. The signatories bound themselves to mutual non-aggression. The agreement (which the other interested States accepted) was hailed with rejoicing in Bulgaria, where conscription and rearmament were now introduced openly. In the autumn there were rumours that Yugoslavia proposed to grant some territorial concessions, but a communiqué following a meeting of the two premiers at Pirot (Oct. 31) only referred to the "unchangeable friendship" and absence of any misunderstandings between the two countries.

In spite of the overwhelming importance for her of her trade with Germany, Bulgaria did not accept an offer made by that country in October to take over all her export surpluses for twelve years in return for German manufactured goods and services. (C. A. M.)

Area and Population :
Area 39,825 sq. miles.
Population (est. Jan. 1, 1938) 6,319,000.
Chief Towns (pop. census 1926) : Sofia (287,976), Plovdiv (100,485), Varna (70,183), Ruschuk (49,388).
Ruler. King Boris III.
Language. Bulgarian.
Religion. Christian, preponderantly Orthodox (Mohammedan 821,000).
Production 1937 :

	metric tons		metric tons
Wheat	1,766,600	Maize	859,300
Barley	329,900	Potatoes	146,000
Rye	238,400	Wool	9,700
Oats	146,500	Tobacco	31,300

Index of Industrial Production (1934–35 = 100) 142·5
Foreign Trade 1937, merchandise :
Imports 4,929,000,000 levs
Exports 5,019,000,000 ,,
Communications and Transport :
Roads, national 30,650 km
Railways 2,850 km.; narrow gauge 419 km.
Motor vehicles licensed (Jan 1, 1937) : motor-cars, 2,902, commercial vehicles, 742, motor-cycles, 544.
Finance and Banking :
Revenue, ordinary (1938, est) 6,709,900,000 levs
Expenditure ,, ,, ,, 7,200,000,000 ,,
Public Debt (Jan. 1, 1938) 22,201,700,000 ,,
Notes in circulation (June 30, 1938) 2,312,766,000 ,,
Gold Reserve ,, ,, ,, 1,994,354,000 ,,
Rate of exchange (Nov. 1938) 400 levs = £1 stg
Education 1936–37 :
Primary schools, 5,373, scholars, 693,748
Total number of schools, 7,974, of scholars, 1,082,397.

BURMA. The separation of this country from India for administrative purposes is now complete ; and it enjoys autonomous government on lines similar to those of an Indian province. The Governor is Sir Archibald Cochrane (since April 1937), and a Council of six ministers, with Dr. Baw Maw as premier, carries on the administration. Burma has been hard hit by the decline in its foreign trade, its dealings with Japan, Germany, and the United Kingdom having all fallen off seriously. An alleged insult to the Buddhist faith by a Moslem author was made the pretext for serious rioting in Rangoon, Mandalay, and other districts in July and September. Over 200 persons were killed and more than 900 injured The Governor restored order by making use of his reserve powers to promulgate the Rangoon (Emergency) Security Act, and on Oct. 21 he was able to declare the state of emergency at an end. Animosity to Indian exploitation, however, does not abate ; and at the end of the year there was a civil disobedience movement in Rangoon. (ME)

Area and Population :
Area 261,000 sq miles
Population (est. Dec 31, 1936) 15,600,000.
Chief Towns : Rangoon (400,415), Mandalay (147,932), Moulmein (65,506)
Governor. The Hon. Sir A. D. Cochrane, G.C.M.G., K.C.S.I., D.S.O
Language. Burmese
Religion. Buddhist (84 per cent).
Production 1937 :

Rice	6,937,400	metric tons
Ground-nuts	203,200	,, ,,
Sesamun	52,800	,, ,,
Cotton, ginned	27,900	,, ,,
Petroleum, crude	1,076,000	,, ,,
Silver	192	,, ,,
Tobacco (1936)	46,700	,, ,,
Maize (1935)	46,700	,, ,,

Overseas Trade, merchandise, 1937 :
Imports Rs. 23,80,27,428
Exports Rs 49,91,79,456
Communications 1937 :
Roads 5,127 miles metalled ; 5,880 miles unmetalled.
Railways 2,060 miles
Inland Waterways (Irrawaddy River) 900 ,,
Finance :
Revenue (revised est. 1937–38) Rs. 16,11,24,000
Expenditure (,, ,,) Rs. 15,35,40,000
Revenue (est. 1938–39) Rs. 15,80,83,000
Expenditure (,, ,,) Rs. 15,42,29,000
Public Debt (March 31, 1938) Rs. 59,56,00,000
Exchange Rate Rupee (Rs. 1) = 1s. 6d.

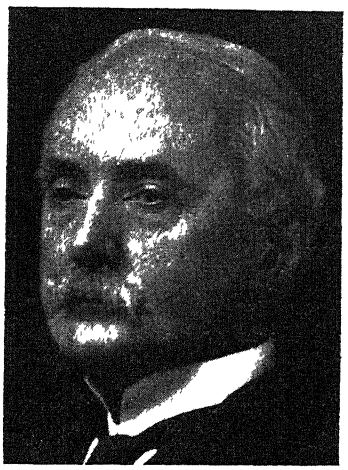
Education 1935–36 :

Total number of schools, 25,804 , scholars, 743,785
Vernacular schools upper primary, 4,597 , scholars, 293,385
" " lower primary, 246 , scholars, 12,184
English high and middle schools, 32 , scholars, 11,045
Anglo-Vernacular high and middle schools, 243 , scholars, 46,833
Vernacular high and middle schools, 1,100 , scholars, 149,463
Rangoon University and Mandalay College, 2,119 students

Miscellaneous :

Motor vehicles licensed (March 31, 1937) 12 190 cars and taxis, 6,593 commercial vehicles, 963 motor-cycles
Wireless receiving-set licences (Dec. 31, 1937) 1,593

BURNET, SIR JOHN (JAMES), British architect, was born in Glasgow in 1857, and died in Edinburgh on July 2, 1938 His father was himself a notable Scottish architect, and Sir John owed much to his influence Among the buildings erected to his design were the Royal Institute of the Fine Arts in Glasgow, the King Edward VII Memorial Galleries added to the British Museum, and the Institute of Chemistry in Russell Square, London. Sir John was knighted in 1914, was elected A R A in 1921, R.A. in 1925, and a Fellow of the R I.B.A. in 1897 He was also a Royal Scottish Academician and a Fellow of the Royal Society of Edinburgh.



P.P Bureau
SIR JOHN BURNET

BUTLER, HAROLD BERESFORD, C B. (1883–), Warden of Nuffield College, Oxford, educated at Eton and Balliol College, Oxford, was a Fellow of All Souls from 1905 to 1912, and entered the British Civil Service in 1907 After holding responsible positions in the Home Office, Foreign Trade Department of the Foreign Office, and Ministry of Labour, he became assistant general secretary to the Labour Legislation committee at the Versailles Peace Conference and one of the original organizers of the International Labour Office, which was set up largely as a result of his success in obtaining financial support from the British government In 1919 he went to Washington as secretary-general of the first International Labour Conference, and in 1920 returned to Geneva to serve as deputy to Albert Thomas at the I L O , succeeding him as director on his death in 1932

On April 28, 1938, Mr Butler resigned the directorship of the I L O , and in June it was officially announced that he had been appointed to the wardenship of the new Nuffield College, Oxford, to take office in Jan. 1939, and to hold it until he is 65.

Mr Butler is married, and has two sons and one daughter; he has studied labour and economic problems in many parts of the world, and, in books, articles, and reports, has published much on them.

BUTLER, SIR (SPENCER) HARCOURT, G C.S.I , G C I E , British Indian administrator, was born on Aug. 1, 1869, and died on March 2, 1938 He was educated at Harrow and Balliol College, Oxford, and entered the Indian Civil Service in 1888 He held posts as Settlement Officer, Deputy Commissioner of Lucknow, and Secretary of the Foreign Department of the Government of India, and was Lieut.-Governor of Burma, 1915–17, Lieut -Governor, 1918–21, and Governor, 1921–23, of the United Provinces of Agra and Oudh, and Governor of Burma, 1923–27. In 1928 he became chairman of the Indian States Committee. In 1931 he published *India Insistent.*

BUTTER : *see* DAIRY FARMING AND DAIRY PRODUCE.

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CABINET MEMBERS. The composition of the Cabinets of the United Kingdom and the British Dominions, and of the United States, at the close of 1938 was as follows

United Kingdom

Prime Minister and First Lord of the Treasury	The Rt Hon Neville Chamberlain
Chancellor of the Exchequer	The Rt Hon Sir John Simon, G C S I, G C V O, O B E, K C
Lord President of the Council	The Rt Hon Viscount Runciman
Lord High Chancellor	The Rt Hon Lord Maugham
Secretary of State for Home Affairs	The Rt Hon Sir Samuel Hoare, Bt, G C S I, G B E, C M G
Secretary of State for Foreign Affairs	The Rt Hon Viscount Halifax, K G, G C S I, G C I E
Lord Privy Seal	The Rt Hon Sir John Anderson, G C B, G C S I, G C I E
Secretary of State for Dominion Affairs * / Secretary of State for the Colonies	The Rt Hon. Malcolm MacDonald
Secretary of State for India and for Burma	The Most Hon Marquess of Zetland, G C S I, G C I E.
First Lord of the Admiralty	The Rt Hon Earl Stanhope, K G, D S O, M C
Secretary of State for War	The Rt Hon L Hore-Belisha
Secretary of State for Air	The Rt Hon Sir Kingsley Wood
Minister for the Co-ordination of Defence *	The Rt Hon Sir Thomas Inskip, C B E, K C
Secretary of State for Scotland	Lt-Col the Rt. Hon D J Colville
President of the Board of Trade	The Rt Hon Oliver Stanley, M C
Minister of Agriculture and Fisheries *	The Rt Hon W S Morrison, M C, K C
President of the Board of Education	The Rt Hon Earl De La Warr
Minister of Health	The Rt Hon Walter E Elliot, M C
Minister of Labour	The Rt Hon. Ernest Brown, M C.
Minister of Transport	The Rt Hon Leslie E. Burgin, D C.I
Chancellor of the Duchy of Lancaster *	The Rt Hon. Earl Winterton

* In Jan 1939 the following cabinet changes were announced Dominion Affairs, Sir Thomas Inskip; Co-ordination of Defence, Admiral of the Fleet Lord Chatfield; Agriculture and Fisheries, Sir Reginald Dorman-Smith; Chancellor of the Duchy of Lancaster, W. S. Morrison

Northern Ireland

Prime Minister	The Rt Hon Viscount Craigavon, D L
Minister of Finance	The Rt Hon J M Andrews, D L.
Minister of Home Affairs	The Rt. Hon Sir Richard Dawson Bates, Bt., O.B E., D L.
Minister of Labour	The Rt Hon. John F Gordon
Minister of Education	The Rt Hon J. H Robb, K.C.
Minister of Agriculture	The Rt Hon Sir Basil S. Brooke, Bt, C B E., M C, D L.
Minister of Commerce	The Rt Hon J. Milne Barbour, D.L

Eire

Prime Minister and Minister for External Affairs	Eamon de Valera, LL D
Deputy Prime Minister and Minister for Local Government and Public Health	Sean T O'Kelly
Minister for Justice	Patrick J Ruttledge
Minister for Industry and Commerce	Sean F Lemass
Minister for Finance	John McEntee
Minister for Agriculture	James Ryan
Minister for Defence	Frank Aiken
Minister for Education	Thomas Derrig
Minister for Lands	Gerald Boland
Minister for Posts and Telegraphs	Oscar Traynor

Australia

Prime Minister	Rt Hon J A Lyons, P C, C H
Minister for Commerce	Rt Hon Sir Earle Page, G C M G, P C, M D
Attorney-General and Minister for Industry	Rt Hon R G Menzies, P C, K C
Minister for External Affairs	Rt Hon W M Hughes, P C, K C.
Treasurer and Minister-in-Charge of Development and Scientific and Industrial Research	Hon R G Casey, D.S O, M C.
Minister for Civil Aviation and Works	Hon. H V C. Thorby
Minister for Defence	Brig the Hon A G. Street
Postmaster-General	Hon A C Cameron
Minister for Trade and Customs	Hon J A Perkins
Minister for Health and Minister for Repatriation	Senator the Hon H S Foll
Minister for the Interior	Hon J McEwen
Vice-President of the Executive Council	Senator the Hon George McLeay
Minister without Portfolio	Senator the Hon A. N. MacDonald
Minister without Portfolio	Hon. V C Thompson
Assistant Minister-in-Charge of Territories	Senator the Hon E J. Harrison

Canada

Prime Minister, President of the Privy Council, and Secretary of State for External Affairs	Rt. Hon W L Mackenzie King, C M G
Minister of Finance	Hon Charles Dunning
Minister of Justice and Attorney-General	Rt. Hon E Lapointe, K C
Minister of Trade and Commerce	Hon W. D Euler
Minister of National Revenue	Hon. J L Ilsley, K C.
Minister of Labour	Hon Norman McLeod Rogers
Minister of Transport	Hon C D. Howe
Minister of Mines and Resources	Hon. T A Crerar
Minister of Agriculture	Hon J G Gardiner
Postmaster-General	Hon J C. Elliott, K C
Minister of National Defence	Hon Ian Mackenzie
Minister of Pensions and National Health	Hon. Charles G Power
Minister of Fisheries	Hon. J E. Michaud
Secretary of State	Hon Fernand Rinfret
Minister of Public Works	Hon. P J. A Cardin
Minister without Portfolio	Hon R Dandurand

New Zealand

Prime Minister, Minister of External Affairs, Native Minister, Minister for Cook Islands, and of Broadcasting	Rt Hon M J Savage P C
Minister of Education, Health, and Marine	Hon P Fraser
Minister of Finance, Customs, and Marketing	Hon W Nash
Minister of Industries and Commerce, and Railways	Hon D G Sullivan
Attorney-General and Minister of Justice	Hon H G R Mason
Minister of Labour and Immigration	Hon H T Armstrong
Minister of Public Works and Transport	Hon R Semple
Minister of Internal Affairs and Pensions	Hon W E Parry
Minister of Mines	Hon P C Webb
Postmaster-General and Minister of Defence	Hon F Jones
Minister of Agriculture	Hon W Lee Martin
Minister of Lands	Hon F Langstone
Minister without Portfolio	Hon M Fagan, M L C

Union of South Africa

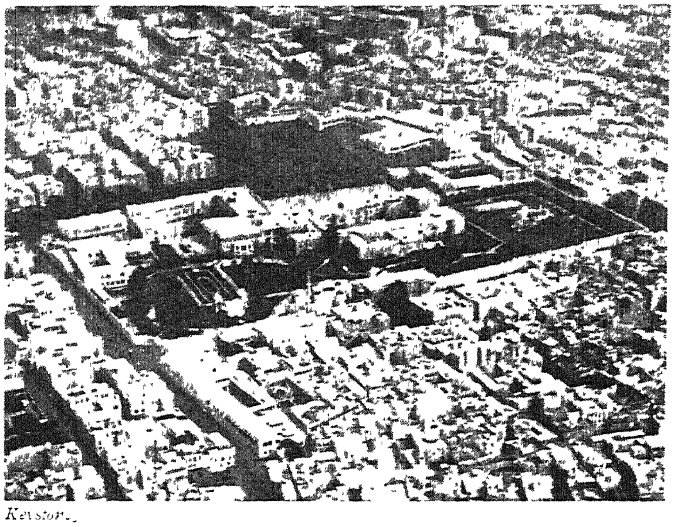
Prime Minister and Minister of External Affairs	Gen the Hon J B M Hertzog
Minister of Mines, Social Welfare, and of Education	Col the Hon Deneys Reitz
Minister of Interior and of Public Health	Hon R Stuttaford
Minister of Commerce and Industries and Minister of Defence	Hon O Pirow, K C
Minister of Finance	Hon N C Havenga
Minister of Justice	Gen the Rt Hon J C Smuts, P C, C H, K C
Minister of Post and Telegraphs, and of Public Works	Senator the Hon C F Clarkson
Minister of Agriculture and Forestry	Col the Hon W R Collins
Minister of Railways and Harbours	Hon A P J Fourie
Minister of Lands	Gen the Hon J C G Kemp
Minister of Labour	Hon H G Lawrence
Minister without Portfolio	Hon R Henderson

United States of America

Secretary of State	Cordell Hull
Secretary of the Treasury	Henry Morgenthau, Jr
Secretary of War	Harry H Woodring
Attorney-General	Homer S Cummings *
Postmaster-General	James A. Farley
Secretary of the Navy	Claude A Swanson
Secretary of the Interior	Harold L Ickes
Secretary of Agriculture	Henry A Wallace
Secretary of Commerce	Harry L Hopkins †
Secretary of Labour	Frances Perkins

* Retired Jan 2, 1939; succeeded by Frank Murphy
† Sworn in Dec 24, 1938, to succeed Daniel C Roper

CAIRO. The transformation which the capital of Egypt has been undergoing during the past two or three years continued during 1938. Many well-known buildings have been pulled down, notably the picturesque French Legation which, following the general trend, has removed to the west bank of the Nile Skyscrapers are replacing the older buildings. But, in spite of this, Cairo, although rapidly losing its oriental character, is becoming quite a handsome city. A contributory factor has been the reduction in the pavements in the main streets rendered necessary by the increase in the use of the motor-car The introduction of the one-way system has considerably relieved the congestion of traffic



Keystone

AERIAL VIEW OF CAIRO SHOWING THE ROYAL PALACE

The city was *en fête* for three days in January for the marriage of King Faruk (Jan 20), and again in November popular rejoicing was great when the birth of the first child of that marriage, Princess Ferial, was announced (Nov 18)

The 18th International Cotton Congress was held in Cairo at the end of January, and the International Tele-Communications Conference in February. (A MN.)

CALCUTTA, on the river Hoogly and its suburb Howrah, on the opposite right bank, have between them a population of nearly 1½ millions The municipal administration is strongly nationalist in character There has been considerable labour unrest during 1938, and the recession in the jute industry has affected the general prosperity of the city. The improvement trust pushes on rapidly with the clearance of slum areas and the construction of broad roads At the end of June, the first through flying-boat arrived in the new air service to Australia

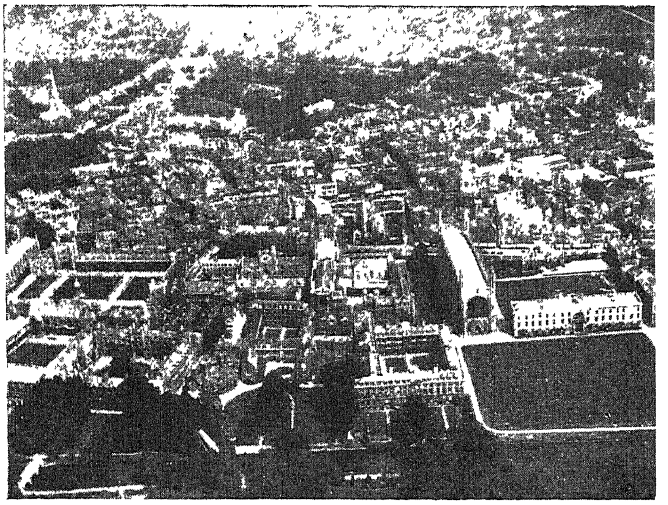
CAMBODIA: *see* FRENCH INDO-CHINA

CAMBRIDGE UNIVERSITY. During the academic year 1937–38 the total number of matriculants was 1,728. There were 5,255 students *in statu pupillari*, including 84 officers of the Royal Engineers, Air Force, and Corps of Signals, and 85 probationers of the Indian, Colonial, and Sudan civil service In addition, there were 496 students at Girton and Newnham Research students continue to increase, the latest official figure being 384

In many departments the numbers have outgrown the capacity of the staffs, and this development, together with the increasing number of departments, has entailed a curtailment of new expenditure. Without an increase of income the university may necessarily be faced with compulsory limitation of numbers in more congested departments.

Four new professors have been elected to chairs vacant by death or retirement, namely, Physics, International Law, Economic History, and Hebrew.

A new chair of Education has been established, and the Training College for Schoolmasters which was founded in 1891 will become the Department of Education. The association of the university with the training of teachers began in 1879, for in that year the Teachers' Training



Sport & General]
CAMBRIDGE AERIAL VIEW OF THE "BACKS"

Syndicate was formed, which established the first English university certificate in education in 1880. The new department is the logical outcome of these pioneer activities, it will admit women and bring Cambridge into line with other universities.

During the year benefactions have been received for the study of Sanskrit, Classical Archæology, Experimental Zoology, Medicine, Metallurgy, and Radio research. The laboratory of Experimental Psychology is being extended by the aid of a generous grant from the Rockefeller foundation and a legacy. Other extensions have been made to laboratories, and a most imposing department of Anatomy, dominating the surrounding laboratories, has been built. The Pitt Press, long the offices of the Registrary, has reverted, in a modernized form, to the university printer, and the Press has also built a handsome building in Euston Road, London, appropriately named Bentley House, for its vast book trade.

Owing to the European crisis the Michaelmas full term, 1938, began four days late. (C. Fo.)

CAMEROONS. The British mandated territory of the Cameroons is administered as part of the neighbouring territory of Nigeria . the same system of indirect rule has been introduced and where possible native treasuries under the tribal authorities receive a percentage of tax. German estates auctioned after the War were to a great extent repurchased by German bidders, and the majority of estate owners are German. The French area retains a separate status under a Commissioner of the Republic, who is a member of the council of French Equatorial Africa. Here the former German owners of estates did not succeed in regaining their holdings to any extent; and the German population is a small minority. Agricultural production is largely in the hands of African peasant farmers. to develop agriculture the French have organized "Sociétés de prévoyance", which dispose of an annual revenue of over 1½ million francs. (J. L. K.)

The area of the British mandated territory is 34,081 sq. miles, and the population (est. 1937) was: Africans, 830,695; Europeans, 408.

Statistics for the French mandate are as follows:

Area and Population:
Area 161,200 sq. miles.
Population (est. Dec. 31, 1936) 2,390,000.
Chief Town: Yavundé (capital).
Commissioner. M. Boisson.

Production:

Maize (1936–37)	34,200 metric tons
Cocoa export (1936–37)	26,500 ,, ,,
Ground nuts (,,)	37,200 ,,
Palm oil export (1937)	10,000 ,, ,,
Gold (,,)	500 kilograms

Overseas Trade 1937:

Imports	257,969,000 francs
Exports	263,367,000 ,,

Communications 1937:

Roads, motor	3,106 miles
Railways, open for traffic	313 ,,

Finance 1938:

Revenue	107,762,000 francs
Expenditure, ordinary	98,392,000 ,,
,, extraordinary	9,370,000 ,,

CAMPING, CANOEING, AND CARAVANNING.

Campers attending the sixth international rally of the Federation of Camping Clubs at Stresa, Italy, were guests of the Piedmontese Camping Club. Delegates represented nineteen clubs and ten countries. Mr. J. A. C. Champion, chairman of the Camping Club of Great Britain and Ireland, was presented, at the rally, with the gold medal of the French Ministry of Physical Education. Portugal organized a new club, and the Belgian club celebrated the honour of the title "Royal" by a meet at Tervueren at Whitsun.

The Camping Club of Great Britain and Ireland organized in April an open-air exhibition opened by Mr. Kenneth Lindsay, M.P., and attended by 12,700 visitors. The club's Empire Exhibition site at Glasgow was visited by 15,000 campers. A national liaison committee was set up to exchange views on camping matters with the Royal Automobile Club. The Middlesex County Council opened sites at Denham Court, Grim's Dyke, and Theobald's Park, which are supervised by the Camping Club.

World canoe championships were held at Vaxholm, near Stockholm, Sweden. Sweden won six events, Germany four, Czechoslovakia two, and Finland one. Seventeen nations entered for events. The Polish Canoe Club held an international meet on the Brda River, and canoeists attended the international camp at Stresa. The Easter meet of the British Canoe Union on the Churnet, Dove, and Trent was attended by 85 canoeists. The largest British meet yet held was the Port of London meet of the Canoe Section of the Camping Club, with 140 canoeists.

Over 200 caravans attended the Whitsun rally of the Caravan Club at Warwick Park. At the opening of Brighton's municipal camp site, fifty caravans of members of the British Caravanners' Club took part, and four of these crossed Europe to attend the international camp at Stresa.

The King visited the "Duke of York's Holiday Camp" at Southwold, Suffolk, which he founded seventeen years ago. The Seaside Camp for London Boys opened a fund to buy a site at Walmer Castle. Sir Percy Everett, treasurer of the Girl Guides' Association, opened "The Shaws" camp, near Cudham, Kent, in May. The land, for the use of girls from the metropolitan area, was presented by the City Parochial Foundation. A party of English public schoolboys visited Kagawong Camp, Ontario, which is run by Canadian boys.

The Mayor of Brighton opened the first municipal camping ground on May 14. The site, of eighteen acres, adjoins a thirty-acre sports ground.

There are now over 150 holiday camps in Great Britain accommodating about 40,000 people. The National Federation of Permanent Holiday Camps has 36 camps with inspectors who visit them unexpectedly. The mini-

mum accommodation required is draught and rain-proof chalets of wood or brick, electric light, running water, and spring beds for one to four persons in each chalet. Butlin's camp at Clacton-on-Sea accommodates 1,500 people, and at Skegness, 1,800 visitors can be accommodated in 600 chalets. The railways offer camping coaches, of which there are 400 scattered over the country

Germany returned to membership of the International Federation of Youth Hostels, whose conference was held in Switzerland in August. The Youth Hostels Association membership increased to over 79,000, and the number of hostels to about 280, with 10,000 beds. A new hostel, towards which the King George's Jubilee Trust granted funds, was opened at Malham in Yorkshire (V. R.)

United States. There are about 50,000 trailers used for pleasure and business in the United States. There are two large and active trailer societies, the Automobile Tourist Association and the Tin Can Tourists, both of them composed mostly of people who use their trailers as homes while they tour about the country.

Modern trailers are equipped with many conveniences, such as cooking-stoves, heating-stoves, electric-light circuits, running water, refrigerators, toilets, shower baths, and, in the larger trailers, bath tubs. Modern trailer camp sites often supply city water, gas, and electricity which can be connected to the trailer. Proper sanitary regulations of camp site and trailer homes are adopted on many public and private camp sites.

CANADA. A self-governing British Dominion of North America; capital, Ottawa; governor-general, Lord Tweedsmuir; prime minister, W. L. Mackenzie King, area, 3,694,863 sq. miles; population (1931) 10,376,786, estimated (1937) 11,100,000.

History. The Dominion government continued under the administration of the Liberal Party, with Mr. Mackenzie King as prime minister, elected to power Oct. 14, 1935. Saskatchewan (*q.v.*) was the only province to hold a general election during 1938, when on June 8, the Liberal Party under Mr. W. J. Patterson was again returned to power, gaining 38 of the 52 seats. In Quebec there were four important by-elections during the year, in each case the National Union Government, which came into power under Mr. Maurice Duplessis in the general election of Aug. 17, 1936, scored a re-endorsement by the victory of its candidate. Of importance in the political field was the resignation of the Rt. Hon. R. B. Bennett, leader of the Conservative Party of the Dominion since 1928, and premier from Aug. 1930 to Oct. 1935. Dr. Robert J. Manion was appointed his successor at the Conservative convention held at Ottawa July 5, 6, and 7, and the official name of the party was changed from Liberal-Conservative to National-Conservative. The Hon. Earl Rowe, leader of the opposition in the Ontario parliament since 1936, also resigned from office and Col. George Drew was appointed leader of the Conservative Party at a convention held in Toronto on December 8 and 9.

In the province of Alberta the government continued under the Social Credit Party of Mr. Wm. Aberhart, the premier, but none of the important social credit principles were placed in operation (*see* ALBERTA).

A royal commission of five was appointed in Aug. 1937 with the Hon. N. W. Rowell, chief justice of Ontario, as chairman to investigate the economic and financial basis of the constitution, in the light of economic and social developments of the last ten years, which may lead to the revision of the British North America Act. During the last months of 1937 and during 1938 the commission visited each province and the federal government departments and national organizations in Ottawa. They have met with representative groups, including the Governments of the provinces, the Canadian Manufacturers' Association, the Canadian Bankers' Association, the Canadian Medical Association, etc. Owing to ill health, Mr. Rowell had to resign his position both on the commission and the bench. In Dec. 1938 the commission was preparing its report, which it was expected would be one of the most important subjects dealt with during the Dominion parliament, opening in Jan. 1939. The commission met with opposition from the premiers of Ontario, Alberta, and Quebec, all refusing to acknowledge the right of the federal government to assume the functions involved.



[High Commissioner for Canada]

VIEW OF QUEBEC FROM THE HARBOUR

Another document presented to parliament during 1938 (April) was a 180,000-word report by the Turgeon royal commission investigating the textile industry in Canada. The report alleged that hours of labour in the Canadian textile industries "are on a par with those of India, China, and Japan", and urged shorter hours without decreasing wages, and recognition of the workers' right to organize. A report was also tabled in the House of Commons (May) from another royal commission under Mr. Justice Turgeon on the grain trade, and a report (June) on prison reform by the Archambault royal commission.

Public interest in Canada in the month of September centred round the gathering war crisis in Europe, which obviously involved the question of the international status of Canada and the problem of participation in a European war. The tone of the press and of public opinion was overwhelmingly in support of the attitude of Great Britain. No official declaration of policy, however, was made until Sept. 27, when the prime minister announced that the government of Canada was "in complete accord with the statement made by Mr. Chamberlain," and that the government was "making preparations for the immediate summons of parliament should the effort to preserve the peace fail." The obvious implication was that the Canadian parliament could alone decide on peace and war. This formal attitude was universally accepted, but the feeling was almost equally universal that participation in a war forced upon Great Britain was inevitable. Here and there dissentient opinions were expressed as, after the crisis, by a large gathering of French Canadian students in Quebec city.

Among events of interest was the official announcement in October of the visit of the King and Queen to Canada and the United States in May 1939 Sir Gerald Campbell arrived in Canada (October) to succeed Sir Francis Floud as British High Commissioner to Canada The Hon Ernest Lapointe, minister of justice, was head of the Canadian delegation to the September meeting of the Assembly of the League of Nations in Geneva. The Hon Philippe Roy, Canadian minister to Paris, retired from the post after a long period of service President Roosevelt visited Canada during August in connexion with the opening of the Thousand Island bridge at Ivy Lea, and was awarded an honorary degree from Queen's university.

Events in the world of art and letters were the various regional drama festivals and the Dominion festival in May The largest exhibition of Canadian art ever held outside the Dominion was an exhibition of a "Century of Canadian Art" shown at the Tate Galleries in London. It was opened on Oct 14 by the Duke of Kent, and contained 360 exhibits representing 120 artists of the past and present. Sir Ernest Macmillan, principal of the Toronto Conservatory of Music and dean of music at the University of Toronto, was elected honorary member of the Royal Academy of Music in London The National Eucharistic Congress was held on the Plains of Abraham (Quebec) in June, with an attendance of over 50,000, Archbishop Villeneuve was appointed by the Pope to act as cardinal-legate

The close of the year 1938 was saddened by two disasters in the mining industries, one in the Nova Scotia mines and one in Thetford Mines, Quebec, involving a total loss of 27 lives with many injuries

In 1938 death gathered its annual toll, including among those eminent in Canadian life (January) Charles Duquette; Rev. Canon James Fee; Sir J Douglas Hazen; Sir Wm Stavert, Rt Hon. Sir George Perley, Lord Atholstan. (February) Hon. Dr W F Roberts (March) Dr D H. McCalman, Hon Walter Scott. (May) Dr Robert Tait MacKenzie, Mrs W D Herridge; Richard Deans Waugh (June) Col J. L. Biggar. (July) Lady Hickson, Dr P H Bedard; Francis Robert Latchford, chief justice of Ontario Supreme Court (September) Sir Andrew Macphail, James Simpson (October) Dr Arthur MacKenzie; Countess of Ashburnham, Sir Henry Gray; Dr J. Aubrey Lippincott, Rt. Hon Lord Shaughnessy, Most Rev. J A Fredericton Richardson, Frank Arnoldi, K C (November) H Rowatt, Canon S. Gould (December) Sir John Aird

Banking and Finance. Figures for the national income for Canada for 1938 were not yet available at the end of the year. During 1937 it had reached 78 per cent of the prosperity peak of 1929, but it is certain that it will not be as high for 1938. A growth in the income from agriculture, the service industries, and possibly mining is anticipated, but this will be too slight to offset the decline in other industries. Total federal revenue from April 1 to Sept 30, 1938, was $287,468,333 as compared with $280,923,965 for 1937, but total expenditures for 1938 amounted to $235,669,317 as against $227,032,144 for 1937 For the seven-month period ending Oct 31, 1938, the budget position was down some $10 millions from that of the corresponding date in 1937 Bank debits in Sept. 1938 at $2,654 millions showed a decline from $2,733 millions in Sept 1937 By an Act of parliament the constitution of the Bank of Canada was amended to eliminate all private holding of shares

Trade and Communication. Canadian trade for 1937 had reached the highest mark since 1930, with Canada in the fifth rank in world trade The recorded figures for export trade for the twelve months ending Sept 1, 1938, totalled $1,020 millions, a decline of $150 millions from the same period for 1937. Imports of $722 millions showed a decline of $55 millions, total trade was down 11 per cent with a decline of $206 millions, while the favourable trade balance was reduced from $393 millions to $298 millions In arriving at these figures, non-monetary gold coin has been left out as, during 1938, about half of the export of gold took the form of coin instead of bullion Bullion is regarded in trade statistics as merchandise and coin is not; therefore, although the export of gold showed a decline of $59 millions, in actuality $48 millions of this was exchanged for gold coin at the Bank of Canada and shipped in this form

One of the chief reasons for the decline of export trade was the reduction of wheat export (showing a decline for 1938 from that of 1937 of 50 per cent, the 1938 crop not being shipped until September) owing to the shortage of the Canadian supplies resulting from the crop failures of 1937. Moreover, the average level of export prices was 5 per cent lower than the previous year, and the markets of the United States were severely crippled by a business recession. For the six-month period ending June 1938, the export trade to the United States showed a decline of nearly 50 per cent The export trade figures for the last months of the year, however, showed an improvement towards the 1937 mark, increasing from a 34 per cent decline in June, and 27 per cent in July, to only about 12 per cent in September

One of the most important developments of the year was the revision and extension for three years of the Reciprocal Trade Treaty of Jan 1936, between Canada and the United States.

The following table is from the *Monthly Commercial Letter* of the Bank of Commerce for Aug 1938, showing export trade, excluding gold coin.

Export Trade

	Six months ending June ($000 omitted)	
	1937	1938
	$	$
Total Exports	528,320	391,076
British Empire	224,580	212,940
Non-Empire	303,739	178,137
United Kingdom	175,961	160,933
United States	241,238	121,816
Continental Europe (ten countries)	31,617	25,443
South and Central America (eight countries, including Cuba and Mexico)	8,403	7,916
Asia		
China and Japan	15,338	11,500
British India	2,900	1,579
Australasia	19,586	24,893
British West Indies	5,724	5,408
British South Africa	8,277	7,701

Revenue from tourist traffic was less than that for 1937, the preliminary estimates for the Dominion for 1938 being $275 millions as compared with $295 millions tourist expenditure for the previous year

Railways. For the first half of the year 1938, the Canadian Pacific Railway and the Canadian National Railway showed heavy losses over 1937 The C.N.R. had a net operating deficit for the half-year of $5,600,000, compared with an income of $6,700,000 in the same period for 1937. The net operating income of the C P R. fell from $8,300,000 to $2,700,000. The heavy movement of grain



Canadian National Railways]
STOOK GATHERER USED IN THE 1938 HARVEST WHICH SAVES MUCH PITCHING AND LOADING

improved conditions during the last quarter of the year carloadings for September and October being the heaviest for years

Aviation Negotiations were made during 1938 for the manufacture of aeroplanes and war-craft in Canada for the British Army. A group of officials of the British Air Ministry visited Canada in July to negotiate with Canadian authorities By Sept 10, final arrangements were brought to a close and a new organization was formed, with a board of directors chosen from various Canadian companies and banks to take charge of the project Two new assembly plants are to be established, one near Montreal, the other between Toronto and Hamilton The placement of these orders has been a stimulus to Canadian business.

In civil aviation the year was marked by the initiation of a Trans-Canada Air Service (Montreal-Ottawa-Toronto-Winnipeg-Vancouver), operating daily in each direction, carrying for the present only mail, freight, and express.

Agriculture, Manufactures, Mineral Production. The agricultural situation was decidedly improved by the large crop of the season and the heavy export of the autumn, although the enormous world wheat crop, estimated at 4,328,000,000 bushels, showing an export surplus too great for present import requirements, threatened a low price and a heavy carry-over for Canadian wheat The railway situation continued as a heavy drain on national income, offset in some measure by continued high mineral production, although the production of iron, steel, and copper, as likewise of newsprint, stood below the 1937 level. The most pleasing feature of the situation was the high credit of the Dominion, and of its leading provinces. The price of Dominion securities corresponds to a power to borrow at 3 per cent, with the leading provinces at the same figure. Bank deposits and the exchanges show a continuous tendency towards the removal of funds into Canadian investment, due in part at least to the insecurity of all European markets. There is every likelihood that this movement will assume still larger proportions, and carry with it new prospects for migration and internal development. Seen in this light, the industrial situation is not only sound, but distinctly encouraging for the stability of investment. The heavy burden of railway deficits and western mortgage interest would automatically be lightened with such a stimulus to development.

The year 1937 closed for Canada with the highest national income since 1930 ($5,000 millions), a record production in mining, fishing, and chemical industries, and an advance in all branches of manufacture and industry despite the failure of the western grain crops Business activity averaged more than 10 per cent over 1936 and 56 per cent over 1932, the worst year of the depression A downward trend in business conditions was felt however, during the last two months of 1937, following upon the business recession in the United States, and continued into 1938, affecting all branches of industry The general recession reached its lowest point in July 1938, and from then on business activity showed a slow upturn, although in practically all fields, at the end of 1938 it was still below the level of 1937 A survey of business activity for Oct 1938 indicated a 3 per cent rise, the best in any month since August, shared by practically all branches of industry The European war crisis of September caused a cessation in this upward trend, but improvement continued after conditions became more settled

Production of newsprint showed a gain for October at 254,872 tons as compared with 231,940 tons for September This was still below the figures for Oct 1937 of 315,477 tons, and a comparison of the months from January to September shows a decline from 2,528,468 for 1937 to 1,719,318 for 1938 For the twelve months ending Sept 1938, construction contracts awarded amounted to $189,121,500 as compared with $213,323,300 for the previous year, the month of Sept 1938 being placed at $19,535,000 as against $21,715,000 for Sept. 1937 The export of pulpwood showed a decline from 1,884,342 cwt in Oct 1937 to 1,001,883 in Oct. 1938 Motor manufacturing plants operated at a low scale of production for 1938, but for September showed an increase of 6,089 units, as against 4,417 units for Sept 1937 The primary iron and steel industries at the end of 1938 were still operating at a lower level than in 1937, although the index of the industry as a whole rose from 73·6 in August to 89·1 in September, while in 1937 it declined from 111·3 to 89·1 between these months (1926 = 100). The production of pig-iron from Jan. to Sept. 1938 declined from 654,438 tons during that period in 1937 to 554,845 tons

Wheat One of the salient features of improvement is in the increased grain crops for 1938. The western wheat crop is of good quality and officially estimated at 334,000,000 bushels (1937, 181,000,000; 1936, 212,000,000). Each of the prairie provinces has an increase on last year's crop: Manitoba, from 48,000,000 to 50,000,000; Saskatchewan, from 37,000,000 to 143,000,000, Alberta, from 74,000,000 to 141,000,000. This increased yield, combined with a price of 80 cents a bushel guaranteed by the Canadian government for No. 1 Hard delivered at the head of the lakes, led to the heaviest grain movement for years during September and October, increased business activity throughout the country, and will result in a higher rural purchasing power, more than $25 millions over 1937, with better distribution than in 1937. Carloadings of grain from Sept. 1 to Oct. 15 were 80 per cent greater than for the same period in 1937, and wheat export in bushels rose from 55,000,000 for the seven months ending Sept. 1937 to 63,000,000 during the same months in 1938. Although the cost to the Dominion government for the wheat purchased, over the market value, will be some $50 millions, this will be made up for somewhat by a reduction in relief expenditure.

Crop conditions in other parts of the Dominion were

satisfactory, except in British Columbia, where there was a severe drought

Mining The mineral production for the first six months of 1938 was valued at $209,654,610, compared with $215,382,814 for the first six months of 1937, or only a 3 per cent decline, which was a good record because of the heavy deflation in non-ferrous base metal prices Gold production showed a consistent rise, over 2,200,000 oz. being produced, 12 per cent more than in 1937 Reduction in the price of base metals led to a decline in the market value of the year's production of copper, lead, and zinc, but the volume yield was ahead of 1937

The following table is taken from the *Monthly Commercial Letter* of the Bank of Commerce for November These are the latest available figures for 1938, but the estimates for the remaining months of the year show very much the same picture The development of the Turner valley oil mines in Alberta, with a capacity of 50,000 barrels a day, is a stimulus to that industry

Canadian Mineral Production

		Twelve months ending July	
		1938	1937
Asbestos	ton	331,911	386,787
Cement	bbl	6,044,268	5,249,555
Clay products	dollars	4,302,177	3,941,030
Coal	ton	15,374,514	15,400,044
Copper	lb	586,200,124	472,315,690
Feldspar	ton	16,076	20,678
Gold	fine oz	4,411,455	3,974,917
Gypsum	ton	1,018,845	964,956
Lead	lb	425,962,870	400,061,999
Lime	ton	486,272	541,404
Natural gas	m cu. ft	33,041,116	30,003,389
Nickel	lb	224,024,906	201,470,780
Petroleum	bbl	5,248,963	1,992,457
Salt (commercial)	ton	463,431	240,951
Silver	fine oz	23,767,727	20,530,667
Zinc	lb	391,323,627	345,761,687

Employment. The index of employment for the year was also an encouraging feature For the first few months it suffered a falling off from 1937, until April, when an increase was shown. This continued, until by Nov. 1938 the figures in the employment bulletin reached within 8 per cent of the recovery peak of Sept. 1937. The monthly reports for August and September showed a gain of employment exceeding that of the same months in any year from 1921 to 1937.

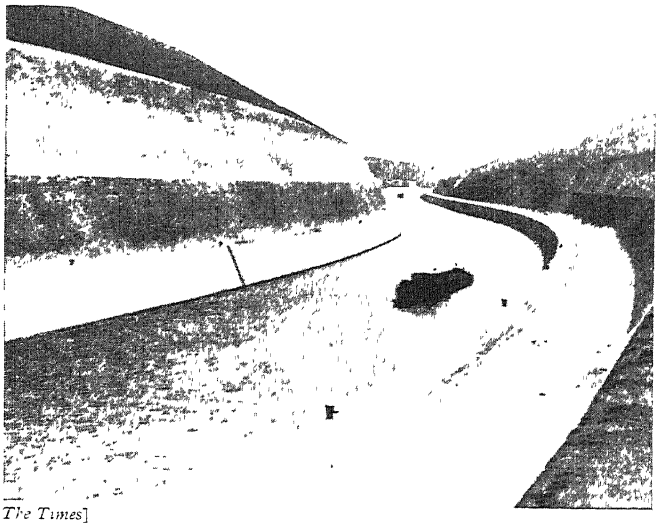
The year was relatively exempt from strikes and labour troubles, the most striking feature in this respect being the occupation of the Art Gallery, Post Office, and other public buildings of Vancouver for a month (July) as a form of demonstration by the unemployed. (S. LEA)

CANADIAN LITERATURE. Without spectacular literary events, 1938 brought gratifying consolidation of recent tendencies towards more pronounced maturity of viewpoint in Canadian books Canada is too young, too close to the dictatorship of the cross-roads church, for a realistic approach to her seamier side. But in a conservative manner a number of young writers are developing into deserved prominence for their serious approach to problems of normal Canadian life Miss Mazo de la Roche, Canada's leading novelist, by publishing *Growth of a Man* proved that she can write brilliant novels without benefit of *Jalna* No outstanding volume of poetry appeared during 1938. Non-fiction was impressive. In the spring three first-class books appeared within a single month. G. M. Wrong climaxed a distinguished career of historical research with his vigorous short history, *The Canadians* R. C. Fetherstonaugh's *The Royal Canadian Mounted Police* is a triumphant synthesis of facts, figures, and drama *Postscript to Adventure*, the posthumously published autobiography of "Ralph Connor" (Rev. C W. Gordon), is the best volume he ever wrote Autumn brought three other significant books—Beverley Baxter's *Westminster Watchtower*, one of the few important commentaries on Imperial affairs by a Canadian, *Robert Laird Borden: His Memoirs*, the impressive documentation of the career of Canada's war-time premier, and J. M Gibbon's *Canadian Mosaic*, a magnificently illustrated account of Canada's racial components. The promising Association of Canadian Bookmen with its effective Book Fairs over-extended itself into temporary eclipse, but *The Canadian Poetry Magazine* continues and the old *Canadian Bookman* has been brilliantly rejuvenated The governor-general's literary awards for 1937 went to Mrs L. G. Salverson's *The Dark Weaver* (fiction), E J Pratt's *The Fable of the Goats* (poetry), and Stephen Leacock's *My Discovery of the West* (general literature) (R S. K.)

CANALS AND INLAND WATERWAYS. In Great Britain, there were no developments in canal construction during 1938, but under the administration of the recently formed Catchment Boards, an increasing degree of activity has prevailed in improving the existing channels of certain rivers, so as to render them less subject to flooding and more serviceable for navigation. As an example may be taken the case of the River Nene. On the 62 miles of river between Peterborough and Northampton, a total of 28 locks have been reconstructed, in sequence with nine which were completed in 1937. The dimensions of the former locks were 101 ft. in length by eleven ft. in width, with three ft. six in. of water over the sills. The new locks are constructed to conform to the standard of craft on the Grand Union Canal, *viz* 83 ft. 6 in. in length by fifteen ft in width, with six ft. of water over the sills. These new locks will accommodate a standard barge of a hundred tons carrying capacity, or two narrow barges abreast, without waste of water, which is an important consideration during periods of drought. Vertical gates have been installed at the lower ends of the locks, so that, if necessary, the locks may be used as sluice-ways in times of flood. The locks, in fact, have been designed for the dual purposes of navigation and land drainage. In addition to constructional work, a good deal of dredging has been done to improve and deepen the river-bed, so as to render it more effective as a navigable channel. River embankment works have been in progress on the Great Ouse and the Humber, in which cases considerable use has been made of the system of fascine mattresses, practised so largely in Holland

France. In France also, no new internal waterway has been under construction, though a project has been revived for the completion of the Canal du Nord, which has been derelict since the Great War, but the government have not seen fit to adopt the scheme Apart from the completion at Lyons of a basin for *hydrocarbures*, with an adjacent small basin for general purposes, the only works carried out during the year have been the strengthening of existing embankments by means of steel sheet piling, or concrete slabs, rendered necessary, and even urgently so, by reason of deteriorations caused by motor-propelled craft, the number of which is increasing.

Belgium. The great national work, the Albert Canal, has made good progress during the year, and preparations are being made to signalize its completion in 1939 by the holding



The Times]
ONE OF THE SECTIONS OF THE ALBERT CANAL ALREADY IN USE
THAT AT VROENHOVEN

of an international exhibition at Liège, dealing with the subject of water in all its phases The Albert Canal, comparable in importance with the Twente and Juliana Canals in Holland, opened in recent years, and the Mittel-land Canal in Germany, referred to below, is 79 miles long, connecting the city of Liège with the seaport of Antwerp, and on completion its construction will have cost about £13½ millions It will reduce the sailing time between Liège and Antwerp to two and a half days, compared with sixteen days in 1929 by the old 95-mile canal route, and five days at the present time The cross-section of the new canal is based on the standard Rhine barge of 1,350 tons, *i e* 262 ft. long by 29 ft beam, with 8·2 ft. loaded draught The canal width is 180 ft and the depth 16 ft. 6 in. There are five locks giving a fall, or lift, of 32·8 ft. each, and one giving 19·7 ft A notable and regrettable incident during the year was the collapse of the Hasselt road bridge, over the Canal, which took place on the morning of March 14. The bridge was 245 ft. span, and had been in service about fourteen months when, without preliminary warning, it suddenly gave way. Fortunately, there was no loss of life. It was a steel bridge of the Vierendeel type, all welded, and weighed 646 tons

Germany. On Oct. 30, the official ceremony was held at Magdeburg, in which Reichsminister Hess opened the final section of a great inland waterway known as the Mittel-land (Midland) Canal. It marks the culmination of a scheme of internal navigation connecting the natural waterways of the Oder, the Elbe, the Weser, and the Rhine, placing Berlin, in the east of Germany, in direct communication by water with the western industrial region of Westphalia. It is now possible for craft up to 1,000 tons in carrying capacity to reach Berlin from the North Sea, and equally, there is a serviceable route from the capital to the south-west as far as Basle on the borders of Switzerland, or eastwards into Silesia as far as Breslau, or again via the Oder to the Baltic.

The great ramification of which the Midland Canal forms the last (though an intermediate) link had been contemplated as far back as the sixteenth century, but it is only within the last fifty years that it has taken definite shape. Altogether, the system aggregates almost 7,000 miles of navigable waterways. The Midland Canal itself is just under 300 miles long. Starting from Magdeburg, it passes through Brunswick, Hanover, and Minden to a junction with the Dortmund Ems Canal; thence through Munster to its termination at the junction with the Rhine. Among notable engineering features are the twin locks at Anderten, near Hanover, with a rise or fall of fifty feet, and the mechanical lift at Rothensee (Magdeburg) with a range of sixty feet Another main arterial waterway, the Rhine–Main–Danube Canal, linking the three rivers in question, is also under construction, and the section of the Main is canalized nearly as far as Wurzburg. The Neckar is canalized as far as Heilbron, and an extension towards Stuttgart, designed for the passage of 1,200-ton barges, is commenced Other works in hand include the Masurian Canal in East Prussia, and the regulation of the Rhine between Strasbourg and Basle

Russia. The completion of the White Sea–Baltic and the Moscow–Volga Canals is now to be followed up by the construction of the Volga–Don Canal, the scheme for which has recently been revised Under the new project, the river Don is to be dammed at the village of Kumovsky so as to create a reservoir, with a capacity of 56 milliard cubic metres of water, running along the valley of the river Karpovka, and rendering it possible to cut through the watershed with a comparatively short length (forty kms.) of canal. The maximum depth of the cutting will be 37½ metres The total length of deep waterway created by the Volga–Don Canal from Stalingrad to Rostov and up to the Don Reservoir will be 1,250 kms., or, if the river Donietz is included, 1,500 kms The width of the canal will be between 100 and 190 metres, and the depth from eight to twenty metres The reservoir water will be utilized for hydro-electric development. (B. Cu.)

United States. During 1938, the work of improvement was practically completed on several large projects, including enlargement of the Chesapeake and Delaware canal to a depth of 27 ft. below mean sea-level and minimum width of 250 ft , canalization of the Kanawha River to provide a minimum channel depth of nine ft. ; the Tygart dam for flood control and augmentation of low-water flow in the Monongahela River navigation pools ; the Bonneville dam for production of power and for navigation in the Columbia River.

Work has been vigorously prosecuted on many other projects, and several of the large and important ones were nearing completion at the end of the year, including the canalization of the Mississippi River to provide a navigable depth of nine ft. between Minneapolis, Minn , and the mouth of the Missouri River ; improvement of the Illinois waterway to ensure a dependable channel nine ft. in depth for navigation throughout its length of 327 miles from the Mississippi River to Lake Michigan at Chicago , construction of the Fort Peck dam and reservoir on the Missouri River in Montana for regulation of the low-water flows. Construction of bank revetment and permeable dykes for stabilization and fixation of the channel in the Missouri River to secure a channel suitable for six ft. navigation to Sioux City, 761 miles above the mouth, has been actively in progress during the year, the project being substantially completed up to St. Joseph, Montana.

CANARY ISLANDS. A group of thirteen islands (seven inhabited) off the African coast, administered as two provinces of Spain—Las Palmas and Santa Cruz de Tenerife. The chief islands are Gran Canaria and Tenerife.

Area and Population :
Total Area 2,807 sq. miles.
Population (est. Dec. 31, 1934) 599,712.
Chief Towns : Las Palmas (83,500), Santa Cruz (66,500).
Language. Spanish (Castilian).
Religion. Roman Catholic.

CANCER. There is a popular belief that Eskimos never have cancer, but investigation of hospital records in Greenland revealed that they have about the same proportion and same kinds of cancer that any other race has. The fact that Switzerland has one of the highest cancer rates in Europe was used by one eminent professor to support the theory that cancer was caused by cosmic rays. The truth is that the Swiss have a high percentage of autopsies and the country is so small that a highly trained medical profession is able to see and diagnose most of the cancer cases.

With the increased interest in the disease, extension of hospitalization, better education of physicians, and the increasing number of autopsies, the cancer rate has risen in the United States. With the increase of the older age groups in the population of most countries, the cancer rate will rise to a maximum based upon the permanent age distribution equilibrium.

Recent studies made in Java showed that cancer in general was about as prevalent among labourers there as in the European countries, if care was taken to compare the same age groups. Remarkable differences, however, were noticed in the distribution of the tumours in various organs of the body. The most striking phenomenon is the high frequency of cancer of the liver in both the Chinese and Javanese. This type of cancer nearly always develops in a liver which is the subject of a chronic process known as cirrhosis. The same peculiar distribution has been noted in the Javanese and Hindus in Surinam. There is a striking difference between the Chinese and Javanese in Java as regards the frequency of cancer of the stomach. The Chinese have about the same rate as the European races living in Java, yet cancer of the stomach is practically not seen in the Javanese. Singularly enough, the Chinese in Singapore also show a high death rate from cancer of the liver, while the Japanese have a relatively low rate and the Filipinos, again, have a high death rate from cancer of this organ. Careful studies are being carried on to see whether dietary or other habits of the different races may in any way account for these differences.

Research. The investigation of the group of synthetic chemicals, interesting because of their powerful physiological properties, has been continued by Cook, Fieser, Dodds, and their collaborators. Extensive studies are being carried on to determine whether different strains of mice and rats have varying susceptibilities to the different types of such carcinogenic substances. The method of administration of the chemicals unquestionably has some influence on the time of appearance of the tumours. Studies on pure strains seem to indicate that moderate variations may exist in the time of induction of the tumours. There is no question that such differences exist between mice, rats, and guinea pigs. The time for the appearance of tumours seems to run roughly parallel with the length of life of the animal.

The various groups and related compounds of the three most highly carcinogenic agents are being studied, but up to now, because of the nature of these chemicals and the difficulty of obtaining highly purified substances, only a limited amount of work has been done. The relationship between the structure and number of attached radicals, and variations in the position of these radicals, are under investigation in many laboratories, and in a short time the structure correlated with high carcinogenic properties will be known.

A far different problem will be the determination of the method of action of the carcinogenic hydrocarbons. The time of appearance of the tumours in the animals seems definitely to be correlated not so much with the quantity of the chemical as with the area exposed to irritation. This has been shown particularly well in the work of Bullock, Curtis, and Dunning, who injected under the skin of mice and rats small paraffin globules containing varying quantities of carcinogenic substances and found that with a sufficient number of globules, even though each contain a minute quantity of the agent, a high percentage of tumours is obtainable. Apparently one hydrocarbon can supplement the other and carry to completion the biological changes in the cells which give them the peculiarity we designate as malignancy. Unfortunately, a study of the microscopic changes in the tissues of these experimental animals which ultimately lead to some sort of change or mutation in the nature of the cell is of little or no value.

Treatment. Work on the study of the damaging capacities of neutrons on various types of tissue, and the beginning of experimentation upon human beings suffering from cancer, has been carried on at the University of California under the auspices of Professor E. O. Lawrence, from whose tests it would seem that neutrons are somewhat more effective than X-rays in killing cancer cells, but this result has not been confirmed as yet from other laboratories.

For the radiotherapeutic treatment of cancer, *see* RADIOLOGY (*See* also BACTERIOLOGY, GYNÆCOLOGY AND OBSTETRICS.)

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(F. C. W.)

CANNING INDUSTRY. Further research was devoted in 1938 to improvement of quality in canned foods. The "Tenderometer", which was used experimentally in 1937 as a means to determine mechanically the tenderness of raw peas used for canning, was extensively applied in actual practice in 1938. Mechanical refinements were made and probable use for products other than peas was indicated. Increased information on the processing of non-acid products was also obtained and bacteriological field studies led to further knowledge of causes of spoilage. Development occurred in new types of processing equipment, and improved processing procedure was regarded as a marked advance in the science of processing (sterilizing) canned foods. There was a further increase in the use of cold-reduced tinplate used for canned foods and a marked increase in the installation of cold-reduction mill equipment.

In Great Britain, fresh activity was shown in expanding the industry. At the government-sponsored enterprise started in Oct. 1936 in the Tearn Valley, 85 firms were in production at the end of 1938, and factory employment was increasing. Factories for canning game birds and venison have also started. Imports of canned goods from Canada and Australia increased during the year.

During 1938, the canning industry of the United States used over 10,000 million tin containers for packing food. The pack of fruits, vegetables, and specialties totalled about 235 million cases, or the equivalent of 6,700 million cans.



Malayan Information Agency]
CUTTING SHED OF THE SIN HENG PINEAPPLE FACTORY IN MALAYA, THE SECOND LARGEST PINEAPPLE-EXPORTING COUNTRY

Fruit and vegetable juices, which are relatively new products, accounted for about 35 million cases, or the equivalent of about 1,000 million cans. Next to fruits and vegetables, milk was the largest item canned About 2,500 million tin containers were used for milk Fish and meat accounted for the remainder of about 1,350 million cans.

An interesting feature has been the development of the beer can. Technological difficulties confronting this achievement were twofold (*a*) to pioneer a design and construction that would withstand the high pressure of pasteurization, and (*b*) to prepare a lacquer which would insulate the beer from the metal of the container. These problems called for unique treatment, but they were solved. The consumption of tinplate for beer cans in 1938 has not yet been estimated, but it was in excess of that for 1937, for estimated consumption of 1½ million base boxes of tinplate (approximately 700 million cans).

ČAPEK, KAREL MATĚJ, Czech dramatist and novelist, was born at Malé Svatonovice, Bohemia, on Jan. 9, 1890, and died in Prague on Dec 25, 1938. A brief account of his work may be found in the *Ency. Brit*, vol. 4, p. 787. His more recent publications included the novels: *Hordubal*, 1934; *Meteor*, 1935; *An Ordinary Life*, 1936; *War with the Newts*, 1937; the plays: *Power and Glory*, 1937; *The Mother*, 1938, and a number of minor works such as *The Gardener's Year*, 1928; *President Masaryk Tells his Story*, 1929 and 1930 (London edition 1934); *Letters from Spain*, 1932, and *Letters from Holland*, 1933.

CAPE OF GOOD HOPE. The provincial council, consisting of the same number of members as are elected from the province to the House of Assembly, sits at Capetown: an executive committee elected by the council administers revenues and may issue ordinances for specified provincial matters subject to approval by parliament. The Cape alone among the provinces has, by an Act of 1856, divisional councils for the purpose of local government.

In the native areas general councils of the natives under European guidance provide organs of local self-government with wide powers. The general council of the Transkei is responsible for an annual expenditure of some £200,000, and has established schools and experimental farms. The Representation of Natives Act of 1936 modifies the franchise previously enjoyed by the native and coloured people and provides for separate election by the Cape native



South African Railways and Harbours]
CAPETOWN UNIVERSITY

voters of three members of the House of Assembly and two members of the provincial council (J. L. K.)

Area and Population:
Area 277,169 sq miles (including Walvis Bay, 430 sq miles)
Population (est. June 30, 1938) 3,635,000 (Europeans, 810,200).
Chief Towns (E. = European pop.) Capetown (344,223 (E 173,412)), Port Elizabeth (109,814 (E. 53,461)), East London (60,563 (E. 31,311)).

Production 1937:
Coal (tons of 2,000 lb.) . . . . 3,706 tons
Diamonds . . 804,877 metric carats (£2,980,980)
Cattle, number 3,631,753
Sheep, woolled, number 19,511,883

Communications and Transport March 31, 1937:
Roads, 36,944 miles; motor services, 5,624 route miles.
Railways, Government . . . . 5,251 miles
Motor vehicles licensed (Dec. 31, 1937): cars, 15,503; buses, lorries, and vans, 3,398; cycles, 341.

Finance:
Revenue (1936–37) £5,864,409 (Collections £2,501,694)
Expenditure (1936–37) £5,744,360
Debt Outstanding (March 31, 1937) . . £4,763,617

Education (European) June 2, 1936: Scholars: Primary classes, 124,244; Secondary, 23,853.

CAPETOWN, the second largest city in the Union of South Africa, is the seat of the legislature. The University occupies fine modern buildings, and there are Anglican and Roman Catholic Cathedrals. In May 1938 General Hertzog inaugurated important additions to the harbour. The scheme, which is to cost £6 millions, is necessitated by the large increase in trade; in 1910 the cargo handled amounted to 950,000 tons, and in 1937 it was over 2,000,000 tons. A new basin is under construction, and the material dredged from the sea will be used to reclaim 360 acres of land, much of which will be used for building. The South African railways have begun the construction of new quays in connexion with the scheme. The construction of a graving dock is contemplated in the future. The fine climate and the beautiful scenery of the environs have made Capetown an important centre for holiday-makers. (J. L. K.)

CAPE VERDE ISLANDS. An archipelago of ten islands and five islets off the west coast of Africa, constituting a colony of Portugal. The islands are divided

into two main groups, Barlavento and Sotavento. São Vicente in the Barlavento group is the chief coaling station on the South American route.

Area and Population :
Area 1,538 sq. miles.
Population (est Dec 31, 1936) 163,000
Chief Towns · Praia (capital), São Vicente.

Governor: Major A G de Figueiredo.

Language. Portuguese.

Religion. Christian (Roman Catholic)

Production 1937 (metric tons): Maize, 148, Preserved Fish, 325, Coffee, 67, Salt, 29,843, Dry Fish, 123, Oranges, 13.

Roads. 306 miles

Finance 1939. Revenue and Expenditure 19,452,001 escudos.

Education 1937. 155 elementary schools, 1 secondary

CAPITAL PUNISHMENT. Marked changes are coming about in Europe in regard to capital punishment Great Britain is leaning toward the abolition of the death penalty On the Continent, States long foes of the death penalty are restoring it.

A popular poll in 1938 gave 45 per cent of British opinion favouring the abolition of the death penalty, and on Nov 16, 1938, the House of Commons passed, by a vote of 114 to 89, a resolution by Mr Vyvyan Adams, favouring its abolition experimentally for a period of five years While the government took a neutral position, it declared that any experimental change in the law should extend beyond the five-year period.

In the United States also there has been a constant effort to change or modify capital penalties. New York joined the large majority of the States at the end of 1937 by granting the jury the right to grant mercy in capital cases. Only six States retain mandatory capital punishment for first-degree murder, these being Massachusetts, Vermont, Connecticut, North Carolina, Florida, and New Mexico Seven States retain the abolition of the death penalty: Maine, Rhode Island, Michigan, North and South Dakota, Minnesota, and Wisconsin. Kansas restored it in 1935 after a period of 28 years Eleven States still hang criminals; 21 States use electrocution; eight States have substituted lethal gas. Utah gives the condemned the choice of hanging or shooting. The following Latin American countries have ended capital punishment: Argentina, Brazil, Ecuador, Peru, Venezuela, Uruguay, Colombia, Costa Rica, Honduras, Panama, San Domingo, and a large part of Mexico

CAPITULATIONS. During 1938 the Montreux Convention, abolishing the Capitulations and setting up a transition period of twelve years for the mixed tribunals, came into full operation Those tribunals took over the entire criminal and civil jurisdiction hitherto enjoyed by the consular courts and their new assize courts worked throughout the year. The judicial reorganization necessitated by this transfer of jurisdiction was approved But up to the end of the year the Egyptian government had not carried out its intention of modifying, as a natural consequence of the abolition of the Capitulations, the prison regime for persons convicted by the mixed tribunals, and foreigners thus dealt with continued to obtain the privileged form of treatment applied to them hitherto.

Most of the Powers availed themselves of the right accorded by the Montreux Convention to opt to retain consular jurisdiction in matter of personal status concerning their own nationals. Within the Empire the only Dominions who did not do so were Eire and South Africa. In addition to personal status matters of British subjects, the British consular courts continue to handle, under the special clauses of the Montreux Convention referring to the British forces, criminal cases against members of those forces and their families, and civil cases against those members for actions in their official capacity In April Mr E W Besly, barrister-at-law, was appointed judge of the British consular court in Egypt, in addition to his duties as legal adviser to the British embassy. (A MN)

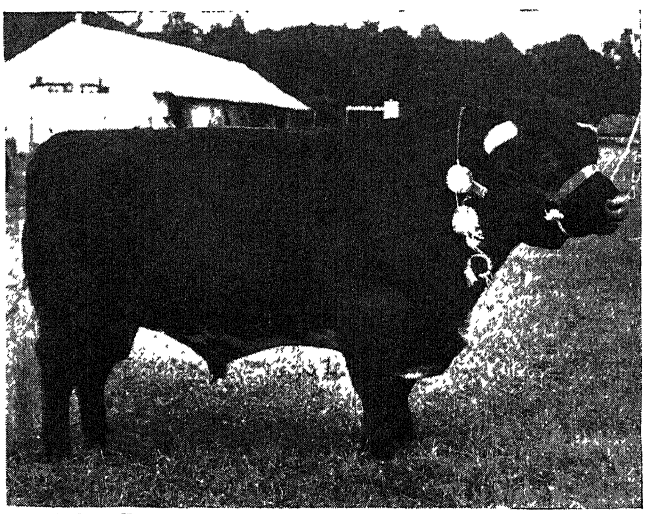
CARAVANNING: *see* CAMPING, CANOEING, AND CARAVANNING

CARDOZO, BENJAMIN NATHAN, Justice of the United States Supreme Court, was born in New York City, of Jewish parentage, in May 1870, and died on July 9, 1938 Called to the Bar in 1891, he immediately set up practice in New York and lived the simple and quiet life of a lawyer till he was elected to the Supreme Court of New York state in 1914, later joining its Court of Appeals In 1932 he was appointed to the United States Supreme Court by President Hoover Cardozo brought a rare mind to his new post, for he had thought and written much about the law, being interested not so much in its precedents and rules as in its philosophy and the reasons for its application. Liberal in outlook, but modest and retiring in disposition, he became known to the entire United States in the earlier part of Mr. Roosevelt's Presidency, when measure after measure involved in the New Deal was challenged for its constitutionality before the court Cardozo invariably took the side of the President, and the judgments pronounced in favour of the New Deal were usually written by him. At first when such cases came up he found himself in a minority of "liberal judges", but since 1937 the minority has become a majority He was unmarried.

CAROLINE ISLANDS: *see* PACIFIC ISLANDS, MANDATED.

CATARRH: *see* EAR, NOSE, AND THROAT, DISEASES OF.

CATTLE AND SHEEP. Although the best British cattle are of excellent quality it is now generally recognized that there is urgent need to improve the quality of the *average* herd, and recently numerous measures have been initiated to achieve this result. Of latter years there has unfortunately been no increase in the numbers of "premium" bulls, *i.e.* service animals qualifying for subsidy by reaching a certain standard, between 1934 and 1937 the number licensed each year fluctuated around 1,460, which represents less than 10 per cent of the service bulls in use



Sport & General]
CARDIFF AGRICULTURAL SHOW: MR J. V. RANK'S CHAMPION SHORTHORN BULL "BAPTON AERIAL"

In 1938 the grants for premium bulls were augmented, the State now paying half the purchase price up to a maximum of £40 as well as additional sums if the bull is kept two years or longer. The cattle subsidy also stimulates the production of better quality beef, those animals which reach the "quality" grade obtaining 2*s.* 6*d.* more per (live) cwt. During the first year of operation of the new subsidy scheme (Aug. 1937 to July 1938) the proportion of animals attaining the quality grade was in Scotland 83·4 per cent, in England 47·6 per cent, in Wales 24·5 per cent and in Northern Ireland 13·1 per cent. (*See* also AGRICULTURE.)

On the European continent the year was marked by appalling ravages of foot and mouth disease. This particular epidemic was brought to France in a consignment of sheep from Morocco in March 1937 and quickly spread to adjoining countries, but the ravages of 1938 were more serious than in the previous year, particularly in Germany. Though full statistics are not yet available, it is estimated that in France, Belgium, and Germany about half the cattle became infected; mortality was not exceptionally heavy, but farmers suffered a loss both of milk production and of beef quality running into several million pounds. In Great Britain the slaughter policy was strictly enforced and the outbreak kept within relatively small dimensions. Over 50,000 animals were killed and some £250,000 was paid by the State in compensation. Denmark also follows the slaughtering policy; up till the early summer of 1938 only 100 farms had been infected but in July and August the disease spread farther. Switzerland applies a modified slaughter policy which also kept the outbreak down.

Sheep. There are about ten million ewes in Great Britain; these have rather more than ten million lambs, but a certain number of these latter will be killed off before June 4, when the returns are taken. By June 4, therefore, there are about ten million lambs; the remainder of the "other sheep"—about three to four million—being rams (about 200,000) and one-year-olds, with a few old wethers. Probably, therefore, about 2½ million lambs survive their first year of existence on the road to mutton. Another 2½ million are required for replacement of the foundation flock of ewes, for the average life of a ewe is about four or five years. Of, say, eleven million lambs born in a year, therefore, about six million are slaughtered as lamb, about 2½ million go into the breeding flock, to find their way eventually on to the market as old ewe mutton, and about 2½ million pass on to the next year to be slaughtered as mutton. Sheep numbers in Great Britain rose in 1938 to 25,537,000, nearly regaining the post-war maximum of 26,411,842 in 1932. The wool clip was somewhat larger than in 1937, when it totalled 77 million lb.

In South Africa the drought at the end of 1937 caused the 1937–38 clip to be twelve per cent lower than in the previous year and also affected the quality adversely, so that wool exports fell from £13·8 million to £8·8 million. However, good rains fell in early spring and a good wool clip is anticipated for 1938–39. Some sheep farmers despairing of wool at 9½*d.* per lb. have been changing over to slaughter-sheep. While the market for mutton appears none too promising, there may be a development of fat lamb exports in the near future as a result of successful experimental consignments to Smithfield.

(For sheep and wool in Australia and New Zealand *see* AGRICULTURE.) (P. L. Y.)

See British Agriculture: A Report of an Enquiry organized by Viscount Astor & B. Seebohm Rowntree. *See* also WOOL.

CAYMAN ISLANDS: *see* JAMAICA.

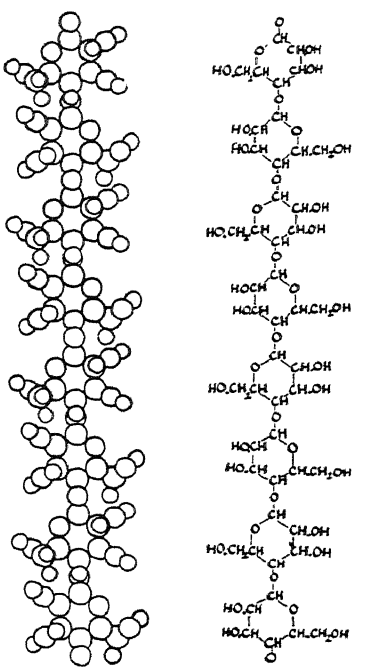
CECIL OF CHELWOOD, EDGAR ALGERNON ROBERT CECIL, 1st Viscount (1864–), British statesman, chancellor of Birmingham University since 1918, and president of the League of Nations Union since 1919. A biographical notice will be found in the *Ency. Brit.*, vol. 5, p. 85. Lord Cecil is an ardent upholder of the ideal of the League of Nations, of collective security, and of the principles of international limitation of arms, his consistent advocacy of which, together with his organization of the Peace Ballot (1934), led to his being awarded the Nobel Peace Prize in Nov. 1937. Housing is another of his interests, and from 1923 to 1936 he was president of the National Association of Building Societies.

Lord Cecil, who is famous as a speaker, gave the Romanes lecture ("Peace and Pacificism") at Oxford in May, and on June 2, on the occasion of the bestowal of the Nobel Prize, spoke on peace at Oslo. In June 1938 he severed his connexion with the Conservative party on account of the government's policy in regard to the bombing of British ships by Spanish insurgents; he expressed strong objection to the prime minister's refusal to take any action, economic or military, to protect British lives or property, and said that he could not any longer allow himself to be treated as even nominally a supporter of the government.

Viscount Cecil married (1889) the third daughter of the second Earl of Durham; there is no heir to the title.

CELEBES ISLANDS: *see* NETHERLANDS INDIES.

CELLULOSE AND CELLULOSE PRODUCTS. During the past decade modern methods of X-ray analysis have enabled the problem of the chemical constitution of cellulose, so long outstanding, finally to be solved in all essential particulars. Cellulose as, now, thus visualized is made up of chains of glucose residues, linked like strings of pearls, in variable numbers per string (200 or even more); each glucose residue consists of six atoms linked to form a ring of five carbon plus one oxygen atoms with subsidiary other atoms or groups of atoms, appended to each such glucose residue ring; then, further, between glucose residue and glucose residue in the chain, between pearl and pearl as it were, is an oxygen atom as intrusive extending link, of smaller dimensions. A bundle of such chains, of large and variable number (fifty or more), then aggregated together, by forces of adhesion, forms what is called a micelle or crystallite, these, in turn, aggregate in more or less ordered array, something like brickwork, to give yet higher aggregations, forming fibrils, fibres, filaments, in the characteristic forms of cellulose, known to laymen. This is the sense in which cellulose is now considered to be crystalline, the micelles or crystallites being the units of crystalline structure which account for optical properties, refraction, etc., of cellulose, just as similar orderliness



among their atoms accounts for optical effects in known crystals In growing plants many substances accompany cellulose, *e g* lignin, pectins, waxes, fats, tannins, sugars, starches, some of which are present in solution in sap and others as interstitial incrustants, not in chemical combinations with the cellulose , the industrial processes for preparing purified celluloses, for use in textiles, paper, etc., are merely various methods of removing these substances with, simultaneously, minimum attack on and damage to the intrinsic merits of the cellulose proper.

This recent clarification of our knowledge of cellulose and its relationships to other substances which accompany it in the living plant has, further, in turn, led to some revision of earlier ideas about the chemical reactions of cellulose. Thus, X-ray analysis has shown that the ester and ether derivatives of cellulose are tri-esters and tri-ethers only; what were previously considered to be the mono- and di-substitution compounds are, in reality, no more than partially esterified and etherified products, since they lack the stoichemical homogeneity that is, of course, an essential of a specific compound, in the sense that, in them, some of the glucose residues of the cellulose chains remain as unesterified or unetherified unchanged survivors That is, scientifically, a great simplification of knowledge which has already led to some important industrial modifications and extensions of earlier procedure

In cellulose dispersions, often called solutions, *e.g.* in viscose, in dopes and lacquers, the cellulose ester compound present is now visualized as consisting predominantly of chains separated from one another, each greatly swollen with an envelope of the solvent, just as gelatine swells in water, so that the dimensions of the chain are thereby much augmented, and there is, simultaneously, by just so much, the less free solvent in which the swollen chains are sustained afloat by the usual kinetic molecular forces characteristic of true solutions. High viscosity is thus intelligibly characteristic of these dispersions , and coagulation, to form rayon filaments and "Cellophane" film, for example, or the lacquered surface on a motor-car, is the reassembly of the chains to form micelles or crystallites and, in turn, the higher aggregates, above described, of the regenerated final product, in the form desired.

Technologically, it is a striking fact that the industrialism of cellulose remains to-day what it has been for many decades, in the sense that, whereas there have continued to be great advances in methods of processing, in detail, those methods are, in practice, applied only to a few species of raw materials, and only a very few of the known chemical reactions of cellulose are employed; industrial advances, intense and of most impressive dimensions as they are, are thus on a very narrow frontage, which is as narrow to-day as it was decades ago Thus, cotton, flax, jute, hemp, etc., are used in the textile industries, perhaps a dozen species in all; for paper, wood and esparto are as dominant as ever; and there are no new-comers of any real importance as yet. Then, again, of the legions of esters and ethers of cellulose known, only the three esters, in use decades ago, namely, nitro-cellulose, the xanthogenate (viscose), and the acetate, are in use to-day in anything like large quantity. The really important advances have all been in improvements of technology, solely, which is very remarkable.

In the pulp and paper industries, modifications of process detail have developed ever-increasing gentleness of treatment for the removal of non-cellulose accompanying substances, so that the intrinsic merits of the cellulose proper are conserved The digestion processes employed have been modified, methods of better penetration and circulation devised so that lower temperatures and shorter times suffice, and bleaching, now carefully controlled so as to avoid the evils of excessive and uneven bleaching, have all played their part in improving quality and yield Straw, always in use for some grades of cheap products and much used for strawboards, is now becoming important, even for good-class white papers, in those countries, having much of it, that now develop their own industrialism, generally behind tariff and freight protection Especially successful in this modern utilization of straw is the Pomilio process, which employs chlorine by the industrialization of the Cross and Bevan assay method, in universal use as a laboratory method since 1880 , in South America and Italy much good-quality paper is thus made, and factories employing the method are being constructed in South Africa and projected in Australia and elsewhere, not only for the use of straw, but for other grasses (*e.g.* kuru-kuri) and wood.

Nitro-cellulose is produced in ever-increasing quantities for explosives, celluloid, lacquers, and so on, as before; but with modifications and improvements that derive from the enormous increase in plasticizers, solvents, pigments, etc , appearing day by day in bewildering number The xanthogenate (viscose) is still dominant in the production of rayon and thin transparent tissue wrapping and it will remain dominant because of the cheapness of the raw materials and the use of water as the dispersion fluid, which are overwhelming advantages not easily to be surpassed Nevertheless, cellulose acetate rayon has also its own intrinsic merit and beauty which have ensured its increasing success , as a plastic material its safety, by comparison with the nitro-cellulose, has ensured the use of acetate for the cinema film used by amateurs and for A R P gas masks, as additions to earlier uses for which it is especially successful, *e.g.* extrusion moulding, of tubes (fountain-pen barrels). Its favourable thermo-plastic properties are also bringing it into increasing use in substitution, in the laundry, for starch as stiffening interlayer in what are known as semi-stiff collars, now much worn by men For this purpose, a three-ply product is made up by employing cellulose acetate as centre-ply with a special dope as adhesive, so that the whole stiffens up when ironed in the laundry, without starching. Thus are made attached or detachable semi-stiff collars with poplin, rayon, wool, or other surface-ply coverings.

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CELTIC STUDIES. The *Revue Celtique*, founded in 1870, ceased publication with the 51st volume in 1934 A new journal, *Études Celtiques*, directed and published by Professor Vendryes, began to appear in 1936, and aims at preserving the chief features of its predecessor, notably the very useful bibliographical notices. An abridgment and adaptation of Pedersen's *Vergleichende Grammatik d. kelt Sprachen*, by Henry Lewis and H. Pedersen, was published in 1937 by Vandenhoek and Ruprecht under the title *A Concise Comparative Grammar of the Celtic Languages*. The new book, written in English, contains much new matter bearing on the British languages.

Gaelic Languages. The most important publication under this heading is the photographic facsimile of the Milan *Commentary on the Psalms with Glosses in Old Irish*, edited

for the Royal Irish Academy by R. I Best, with a valuable Introduction (1936). The Irish MSS. Commission published in 1938, under the editorship of Dr Gwynn a facsimile of *The Patrician Documents in the Book of Armagh*. *Hessens Irisches Lexicon*, "a concise dictionary of Early Irish with definitions in German and English" (Niemeyer, Halle, reached in 1938 the second fascicule of the second volume, (luchait—2 ochtach) A welcome modification of the original plan of the work is the increasing number of references and quotations Among editions of literary texts may be mentioned E Knott's of *Togail Bruidne Da Derga* (1936), and K Jackson's of *Cath Maighe Léna* (1938), both published by the Stationery Office, Dublin; *Scottish Verse from the Book of the Dean of Lismore*, edited by W J Watson (Oliver & Boyd, 1937), *Poems from the Book of the Dean of Lismore*, a transcript of the unpublished poems in the MS prepared by the late E C Quiggin (Cambridge University Press, 1937) The investigation of early Irish law by Thurneysen and his pupils is continued in *Studies in Early Irish Law* (Hodges, Figgis & Co., 1936). J Cameron's *Celtic Law* (William Hodge & Co., 1937) deals also with an early legal system in Scotland

Welsh Language. Professor Lloyd-Jones's great lexical work, *Geirfa Barddonaeth Gynnar Gymraeg* (Cardiff, Welsh University Press), progresses steadily, and has reached *dofre* Professor Ivor Williams's editions of early texts now include *Cywyddau Iolo Goch ag Eraill*, 2nd ed (1937), and *Cano Aneirin* (1938), both published by the Welsh University Press. An elaborate treatment of Welsh names is begun in R. J. Thomas's *Enwau Afonydd a Nentydd Cymru I* (Welsh University Press, 1938) (J. F.)

CENTRAL INDIA. This is the name given to a group of States, of which Bhopal, Indore, and Rewa are the chief, adjoining the Central Provinces, and under the supervision of an agent (Mr K. S. Fitze) to the Governor-General, with his headquarters at Indore. The total area is over 53,000 square miles, and the population 6,655,158

CENTRAL PROVINCES AND BERAR. The new status of this Indian province was emphasized by the terms announcing the appointment, in May 1938, of the present Governor, Sir Francis V. Wylie, "after consultation with H E H. the Nizam of Hyderabad and Berar". His predecessor, Sir Hyde Gowan, had resigned on account of ill-health, and died soon after reaching home The Ministry which took office in April 1937 was sharply reminded of the allegiance it owed to the Congress. Owing to internal dissension, Mr Khare the prime minister arranged a reconstruction of the cabinet in the regular constitutional method, the Governor dismissing one set of ministers and calling in another. The Congress authorities took exception to this, and ordered Mr. Khare, who defended his action before them, to resign He obeyed, and his rival, Pandit R. J. Shukla, became prime minister in his place. At an earlier stage, the only Moslem minister in the original cabinet, holding the portfolio of Justice, has been forced by public opinion to resign for improperly favouring a Moslem convict. In other respects the year was uneventful, though the province suffered from a very defective cotton crop. (ME.)

Area and Population:
Area 131,557 sq. miles.
Population (1931) 15,323,058.
Governor. Sir Francis Wylie, K.C.S.I.
Languages. Hindi (56 per cent), Marathi (31 per cent).
Religions. Hindu, Mohammedan.
Production 1936:
Number of factories 718
Averge daily no. of workers employed . . 63,186
Finance and Banking:
Revenue (1937–38) . . Rs 5,93,54,000
Expenditure (1937–38) . . Rs. 5,95,70,000
Motor Vehicles licensed (March 31, 1937): cars and taxis, 4,076, commercial vehicles, 2,119, motor-cycles, 732.

CEREALS: *see* GRAIN CROPS

CEYLON. The new constitution, in spite of its unusual features, continues to work without excessive friction, and the island has had a return of relative prosperity, its export values in the three chief industries—tea, rubber, and coconuts—having been better in 1937 than at any time since the slump in 1930 The new Governor, Sir Andrew Caldecott, has had to deal with a storm in a tea-cup over a young Australian planter, whom his predecessor, Sir Edward Stubbs, had ordered to be deported for his political activities The State Council censured Sir Edward for his action, and a commission of inquiry was held, which reported, *inter alia*, that the inspector-general of police, against whom accusations had been made, was guilty of no misconduct The Governor adopted this finding in the face of further protest by the State Council, and tension continues

A project has been sanctioned for large improvements to Colombo harbour at a cost of £1 million; they will include two new piers, an oil dock, and a deep-water quay (ME)

Area and Population:
Area 25,332 sq. miles.
Population (est. Dec. 31, 1937) 5,780,000
Chief Towns. Colombo (284,115), Jaffna (45,708), Galle (38,424), Kandy (37,147)
Governor. Sir Andrew Caldecott, K.C.M.G.
Languages. Sinhalese, Tamil.
Religions. Buddhist and Hindu the chief.
Production, 1937:
Tea (exports) . . . . 96,700 metric tons
Rubber . . . . 71,000 ,, ,,
Copra . . . . 179,000 ,, ,,
Overseas Trade 1937:
Imports . . . . . Rs. 243,135,826
Exports, domestic . . Rs 310,197,774
Re-exports . . . Rs. 21,919,149
Communications 1938:
Roads, main . 4,113 miles surfaced
Railways . . 951 miles (117 miles narrow gauge)
Shipping (1937):
Tonnage: entered 12,054,181; cleared 12,050,484.
Finance and Banking:
Revenue (1937–38) . . Rs. 113,206,134
Expenditure ,, . . Rs. 120,502,590
Public Debt (Sept. 30, 1937): Sterling £12,243,775; Rupee Rs. 30,775,000.
Note circulation (Sept. 30, 1937) Rs. 48,388,984
Reserves, silver Rs 14,212,053; securities Rs. 45,195,266
Currency: Rs 1 = 100 cents = 1*s.* 6*d.*
Education 1937:
Primary, Sinhalese and Tamil. schools, 5,439; scholars: 417,339 boys; 275,101 girls.
English and bilingual: schools, 400; scholars, 91,745.
Miscellaneous:
Motor vehicles licensed (Dec 31, 1937): 20,181 cars and taxis, 6,816 commercial vehicles, 2,997 motor-cycles.
Wireless receiving set licences (Dec. 31, 1937) . 4,911
Telephones (1937) . . . 10,320 instruments

CHACO, an undeveloped region in South America (area: approximately 100,000 sq. miles), lying between Bolivia and Paraguay proper and subject of a serious controversy between them.

During the early months of 1938, negotiations for settlement were continued without success. Twice, in April and in June, agreement appeared near, but, owing especially to the recalcitrance of Paraguay, efforts failed of consummation. A proposal in June that Paraguay should cede Bolivia a port on the Paraguay River evoked a storm of

disapproval in Paraguay, and rumours that Paraguay was buying aeroplanes in Italy caused predictions that war would be resumed

Finally, a draft agreement was approved by both governments, and on July 21 a definite treaty was signed at Buenos Aires Territorial demands of both sides were reduced and the remaining area submitted to the arbitration of the presidents of the six mediating republics (Argentina, Brazil, Chile, Peru, U S A, Uruguay), who were to make the final award within two months of ratification of the treaty In lieu of the proposed ports, Bolivia was given "the amplest free transit" for goods from abroad through specified zones. On Aug 10, the treaty was approved by the National Constitutional Convention of Bolivia and by national plebiscite in Paraguay, and on Aug 29 formal ratifications were exchanged The arbitral award, giving Paraguay a boundary 275 miles from the Paraguay River and 69,000 sq miles of the entire disputed area, was announced Oct 10 On Nov 26, formal diplomatic relations were resumed between the two countries, leaving only the actual marking of the boundary to be done (*See* also BOLIVIA, PARAGUAY) (L W BE)

CHALIAPIN, FEDOR IVANOVICH, Russian bass singer, was born at Kazan on Feb 15, 1873, and died in Paris on April 12, 1938. A biographical notice of him may be found in the *Ency Brit.*, vol 5, p 196 He continued, in his later years, singing in Paris, London, and elsewhere; but in 1932 he made a new departure by appearing in a cinematographic picture as Don Quixote, with George Robey as Sancho Panza. His two publications were *Pages from My Life* (1927) and *Man and Mask* (1932).

CHAMBERLAIN (ARTHUR), NEVILLE (1869–), British statesman (see *Ency Brit Book of the Year*, 1938, p. 142), prime minister since May 28, 1937.

No British prime minister has had greater difficulties to face than had Mr. Chamberlain during 1938, and at the close of the year it was matter for satisfaction that, while his influence at home had been in no way impaired, his international reputation had been vastly increased. His dramatic flights to Germany during the Czechoslovak crisis of September, when he was widely hailed as the Saviour of the Peace, undoubtedly eclipsed his other achievements (*see, inter alia,* GREAT BRITAIN AND NORTHERN IRELAND); but in home politics as well as in foreign his was no easy task, though in at least two directions, namely, his insistence on rearmament and preparedness for war as a means of lessening tension and increasing the sense of security throughout Europe, and the conclusion on Nov. 17 of the Anglo-American Trade Agreement, he met with the approval of the vast majority of the people. His cabinet easily survived the resignations of Mr. Eden (Feb 20) and Lord Swinton (May 16), but some restiveness became apparent in the country through the continued bombing of British ships in Spanish waters (despite the Anglo-Italian Agreement of April 16), and similar incidents, culminating, after the Munich Agreement, in the resignation of Mr. Duff Cooper, First Lord of the Admiralty (Oct. 1), as a protest against the premier's foreign policy. A resolution of confidence signed by over 220 supporters in the Commons at the close of the November session, no less than the general trend of the post-Munich by-elections, suggested, however, that there was no general wish for Mr. Chamberlain's super-session

The prime minister and the foreign secretary (Lord Halifax) visited Paris on Nov. 23 and 24 and had clarifying conversations with MM. Daladier and Bonnet; and on Nov 28 it was announced that the two ministers would pay a similar visit to Signor Mussolini in Rome early in the New Year.

CHAMBERS OF COMMERCE. During 1938 the Association of British Chambers of Commerce took important steps to assist trade and industry Early in the year it assured the Chancellor of the Exchequer of its support in connexion with national defence, but urged that there should be no increase in the rates of direct taxes as this would cause disturbance to trade and restrict enterprise.

The Association called a special meeting of members engaged in export trade in October to discuss all aspects of overseas trade A report was issued in Jan 1939 making important recommendations to the government to overcome the difficulties now experienced by exporters in trading with many foreign countries It urged consideration of the present governmental machine for arranging new trade agreements, and suggested that such agreements should, in the future, secure definite purchases by foreign countries in return for the large purchases by the United Kingdom from such countries

A special committee of representatives of Chambers of Commerce was appointed to deal with all questions arising in connexion with the provision of Air Raid Precautions by industrial establishments and the government was urged to make a pronouncement on the subject of war-risk insurance of shipping, house property, goods, etc, so that a scheme might be available in any emergency.

An important report was drawn up on trade with the Soviet Union urging a larger purchase by it of British manufactured goods in return for British purchases of raw materials. The importance of employing British shipping in trade with the Soviet Union was also stressed.

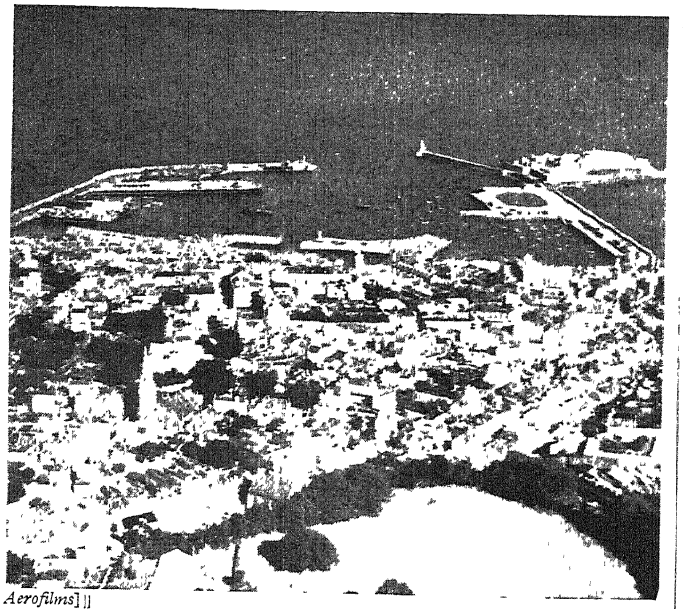
Strong representations were made to the Chancellor of the Exchequer urging non-acceptance of the proposals of Germany to default on the Austrian loans, which question was eventually satisfactorily settled between the two governments.

The Association took an active part in connexion with the legislation before parliament, particularly the Coal Mines Bill and the Hire Purchase Bill The proposed new trade treaty with the United States also received special attention, and British firms were assisted in securing payment of outstanding debts for goods supplied to Nicaragua.

Two important reports issued concern the commercial employment of students with degrees in commerce and the training of artisans.

Throughout the year the Association has been constantly dealing with questions connected with national finance and taxation, home legislation, transport, postal affairs, education, overseas trade and tariffs, trade agreements, and all matters affecting the industrial and commercial interests of the country (R B. D.)

In the United States during 1938 the number and effectiveness of Chambers of Commerce were increased, and they continued to be an important part of the American business and social machinery There are now about 2,500, including other organizations operating somewhat similarly. Many of them undertook various types of public relations activities. Their purpose was to bring to the public a better understanding of business and the American system of free enterprise. They also showed a definitely greater interest in the continued increase in the cost of government, and adopted policies and activities directed at reducing public expenditures.



Aerofilms]

ST PETER PORT, GUERNSEY

CHANNEL ISLANDS. A group of nine islands off the coast of Normandy, constituting a self-governing British possession Jersey, the largest, has a separate administration, while Guernsey has jurisdiction over Alderney, Sark, Herm, and the other islands The main industries are agriculture and horticulture, the chief agricultural products being tomatoes and potatoes. Jersey cattle are widely known The islands are very popular holiday resorts. Granite is quarried in Jersey and exported to Great Britain. There are no railways in operation, but the larger islands have good motor roads. A regular air service links Jersey with Southampton and London; Jersey and Alderney have airports, and one is in course of construction in Guernsey Elementary education is under the States of Jersey and Guernsey, the authorities working in co-operation with the British Board of Education. A battalion of a British regiment is usually stationed in Guernsey: service is still compulsory in the Royal Militia of each island, but a sufficient number of volunteers is obtained each year to maintain the strength.

Area and Population:

Area 75 sq. miles (Jersey, 45 sq miles; Guernsey, 25 sq. miles)

Population (est. Dec. 31, 1936) 93,000

Chief Towns: St Helier (Jersey), St. Peter Port (Guernsey).

Language: official, French; spoken, English.

Religion. Christian.

Lieutenant-Governor. Jersey: Major-Gen. Sir H. de C. Martelli, K.B.E.

" " Guernsey: Major-Gen. Sir E. Broadbent, K B E.

Finance 1937:

Revenue: Jersey, £527,860, Guernsey, £433,659.

Expenditure: Jersey, £552,290; Guernsey, £425,242.

Public Debt (Dec. 31, 1937): Jersey, £1,277,590; Guernsey, £1,514,541.

Currency, sterling. own copper coins.

Miscellaneous: Motor vehicles licensed (approx. Dec. 31, 1937): Jersey, 11,000; Guernsey, 5,000. Telephones: subscribers, Jersey 5,505, Guernsey 4,521. (W.H.W.)

CHEMISTRY. Under this heading some recent advances in modern chemical research are briefly outlined.

Sterols and Sex Hormones. One of the outstanding chemical developments of recent years is the elucidation of structure and reactions of the sterols. In 1934, during the course of certain experiments on male urine, Butenandt isolated two substances, namely, androsterone, $C_{19}H_{30}O_2$, and dehydroandrosterone, $C_{19}H_{28}O_2$. Interest in this work was stimulated in 1935 by Ruzicka's synthesis of androsterone from cholesterol The steps required two catalytic reductions and an oxidation. Since then, Marker has simplified this synthesis, and still more recently Marker, Whitmore, Kamm, Oakwood, and Blatterman have announced the synthesis from cholesterol of 3-chloro-5-dehydroandrosterone from which any of the three naturally occurring male hormones (androsterone, 5-dehydroisoandrosterone, and testosterone) were obtainable. These investigators also have synthesized œstrone (theelin), one of the two female hormones, from ergosterol

Luteal hormone or "progestin", from corpus luteum, is the active principle responsible for the progestational modifications of the uterus. It was isolated in crystalline form through the work of Allen, Wintersteiner, and Corner.

In a series of articles written in 1938, Marker and co-workers described the isolation of a new compound named uranetriol from the sterol fraction of stallions' urine and of mares' pregnancy urine. The new parent hydrocarbon "urane" differs from the previously described "pregnane" only in the stereochemical configuration on position 9 The three hydroxyl groups in the triol are at positions 3, 11, 20 The isomeric 3,4,20-pregnanetriol was isolated concurrently. This is the first time in sterol work that adjacent hydroxyls (on 3 and 4) have been noticed, but very recently Marker has synthesized two other such compounds by oxidation of sitosterol and stigmasterol with selenium dioxide.

It is noteworthy that sex hormones, both male and female, and the luteal hormone all possess a skeleton closely related to the sterols, the bile acids, toad poisons, the digitalis group of heart stimulants, and the saponins. In interpretation of the possible biological origin of the steroidal hormones, the bile acids, and the cortical steroids, Marker has suggested that their precursor is not cholesterol, as has been formerly supposed, but is 4,8-pregnadiene-17,21-diol-3,11,20-trione. The various steroids are shown to come by orderly processes usually having their counterpart in the laboratory.

Vitamin B_1. Recent years have seen repeated successful attacks on the structure of the various vitamins. Vitamin A of fish-liver oils is an unsaturated alcohol whose carbon skeleton is composed of four isoprene units. (Isoprene is more familiarly thought of as the building unit of rubber. On standing, isoprene polymerizes to rubber.) Recent work with vitamin B_2 has established that riboflavin is one of its constituents. Vitamin C or ascorbic acid, present in fruit juices, has been proved to be related to the sugars. Vitamin D is formed by irradiation of ergosterol with ultra-violet light, from which its relationship to sterols and sex hormones is evident.

Vitamin B_1, the anti-neuritic vitamin, has been studied extensively during the past few years by R. R. Williams and co-workers, for which work Dr. Williams was the 1938 recipient of the Willard Gibbs medal in chemistry. Rice polishings are a rich source of this vitamin, but its rarity is evident when it is realized that only about twenty grams is present per ton of the chaff. By the best process of tedious extraction, about five grams per ton is actually isolable. This vitamin, isolated in this manner as a hydrochloride, is crystalline, and analysis revealed twelve carbon atoms in the molecule. On treatment with sodium sulphite and sulphurous acid, it was split into two parts, each containing

six carbon atoms One of these units was a pyrimidine and the other a thiazole The nitrogen atom of the thiazole was the point of attachment to the pyrimidine Synthesis of this vitamin was the direct consequence of this analytical information It constitutes a triumph of modern chemistry and completes a phase of work started by Williams a quarter of a century ago.

Petrol by Polymerization. When kerosene lamps were in vogue, before the day of the motor-car, the problem of the petroleum refiner was that of increasing the kerosene output at the expense of the petrol With the disappearance of lamps and the advent of motor-cars, this situation became reversed. The supply of " straight-run " petrol became increasingly less adequate until finally the " cracking process " came to the rescue As is well known, the mineral oils, which are represented as large hydrocarbon molecules, may become broken down into smaller, more volatile hydrocarbons by high-temperature methods of " cracking " or pyrolysis To illustrate, an oil which is too non-volatile for motor fuel might contain eighteen carbon atoms per molecule. On cracking, it might break into two smaller molecules of nine carbon atoms each. This smaller hydrocarbon would be satisfactory petrol It would be satisfactory also if the C_{18} broke into $C_{10} + C_8$ unit or even three C_6 units, but the trouble is that much of the pyrolysis gives rise to still smaller units which are gaseous and hence just as unfit for purposes of petrol as the original oil. Various uses for the gas have been devised, but to a large extent it has been used merely as fuel for the refinery furnaces.

It has been recognized for years that a major problem was that of recombining the smaller, gaseous hydrocarbon units into petrol. Thus, if two C_4 units (butylene) could be welded together, a C_8 molecule (octylene) would result Similarly, three C_3 units (propylene) could be visualized as the precursor of a nonylene (C_9H_{18}). This process is known as polymerization.

Although polymerization of olefines is not new, the industrial application of it is. In one recently installed process, yields of 3·3 to 10·9 gallons of petrol were realized per 1,000 cubic feet of cracked gases which contained 18–69 per cent of propylene and butylene. A commercial plant is in operation which is producing petrol at the rate of more than five gallons of petrol per 1,000 cubic feet of cracked gas.

Ipatieff and co-workers have been particularly active in this development. They found that phosphoric acid was very effective in promoting the polymerization Phosphoric esters, the addition products of the acid and olefine, were formed first: *e.g.* isopropyl dihydrogen phosphate, $H_2PO_4C_3H_7$, from propylene. At the temperature of the reaction involved (100–200° C.), two such molecules are considered to interact, regenerating the phosphoric acid ($2H_3PO_4$) and forming one molecule of hexylene, C_6H_{12}. By continuing the same mechanism, the C_6H_{12} may change further to C_9H_{18} or $C_{12}H_{24}$.

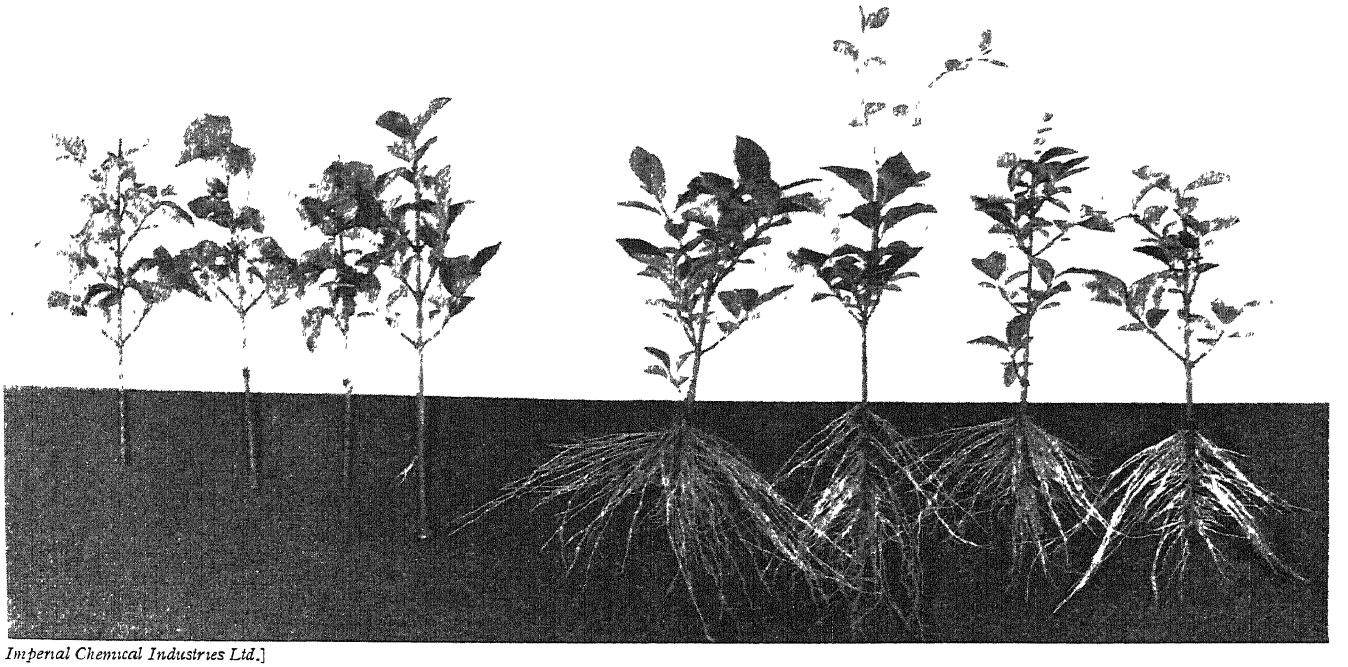
One feature about the polymer petrol is its high anti-knock rating. Such is the case because the carbon skeletons of the hydrocarbons produced are necessarily branched-chain, not straight-chain. Although the polymerization process is in its infancy in the petroleum industry, it bids fair to rise rapidly to a position of importance.

Mechanisms in Thermal Decompositions. The past few years have witnessed a remarkable development in understanding what goes on " behind the scenes " in organic reactions, especially in reactions of pyrolysis Tangible evidence for at least three mechanisms has been demonstrated, two of which were reported by Hurd and collaborators in 1938 A semi-ionic mechanism has been shown to apply for the thermal rearrangement at 200–250° C of unsaturated ethers into phenols, or the related rearrangement of allyl vinyl ether into allylacetaldehyde A mechanism involving a hydrogen bridge accounts satisfactorily for the pyrolysis at 400–500° C. of esters into acids and olefines The absence of other products such as aldehydes is evidence that preliminary scission of the ester into unstable parts or radicals cannot apply. Such a mechanism does apply, however, in the decomposition at 550–700° C of such compounds as paraffin hydrocarbons The radicals, formed initially, generally do one of two things decompose further into an unsaturated compound and a smaller radical, or react with the surrounding molecules of the original substance

In the last type of mechanism it is important to know the strength of bonds between atoms, because the initial split should come at the point of greatest weakness Rice has approximated the strength of the bond which breaks by finding the " activation energy " involved in the pyrolysis The activation energy plus the average energy of the molecules at the temperature of decomposition gives a satisfactory measure of the strength of the linkage which breaks. Experimentally, this activation energy was determined by passing the vapours of the compound rapidly through an evacuated tube heated to different measured temperatures and noting the time required to remove a standard metallic mirror of antimony by its combination with the reactive radical and subsequent volatilization. Since this time of removal depends on the concentration of radicals at that point, it is related also to the rate of dissociation of the original compound. If, therefore, the experiment is performed at two or more temperatures, the activation energy may be calculated.

As would be expected, there was considerable variation in the strength of various bonds. That between carbon and oxygen (in methyl ether) was stronger than the one between carbon and nitrogen (in trimethylamine). The former was 81,100 calories and the latter 50,800. The carbon-to-carbon bonds in ethane, propane, and heptane respectively were 79,500, 71,500, and 63,200 calories. This demonstrates a definite lessening in stability in passing from the lower to the higher members of the family of saturated hydrocarbons. Kistiakowsky observed a similar diminution of activation energies in the pyrolysis of tertiary butyl and tertiary amyl alcohols. The former 4-carbon alcohol gave 65,500 calories, whereas the latter 5-carbon alcohol gave 60,000. Generally, activation energies of 50,000–80,000 calories may be expected for such decompositions in the aliphatic series.

Subsequent reactions of the radicals proceed in the direction of lower activation energies. The methyl radical (CH_3), once formed, is prevented from changing into a methylene radical (CH_2) because at least 100,000 calories would be required. Other radicals such as ethyl, propyl, etc., may decompose readily enough. Only 49,000 calories are required to change ethyl (C_2H_5) into ethylene (C_2H_4) and atomic hydrogen (H). Still smaller energies are required for higher radicals. Even smaller energies are required for the radicals to appropriate hydrogen from neighbouring molecules on collision with them. Thus, the reaction: methyl + ethane (C_2H_6) to produce methane (CH_4) + ethyl requires only 20,000 calories A similar energy require-



Imperial Chemical Industries Ltd.]
PROMOTING ROOT GROWTH FROM PRIVET CUTTINGS BY TREATMENT WITH PLANT HORMONES ON THE LEFT, CONTROL, ON THE RIGHT, TREATED WITH HORTOMONE "A"

ment is involved in the change of atomic into molecular hydrogen (H to H_2) by collision with ethane New radicals are set up by these collisions and a chain of reactions is inaugurated

Such a reaction mechanism implies that pyrolyses could be induced at temperatures considerably below the ordinary decomposition temperature if only some supply of radicals was present This implication was substantiated in Allen and Sickman's work on acetaldehyde, and in Cramer's work on hydrocarbons. It happens that acetaldehyde is stable at 300° C , whereas azomethane gives rise to methyl radicals at that temperature A mixture of acetaldehyde and azomethane was heated to 300° C., with the result that a normal type of pyrolysis of the aldehyde was obtained. Hence, the methyl radicals must have initiated the breakdown of the acetaldehyde. Similarly, at 200–300° C., Cramer found that tetraethyllead in decomposing to ethyl radicals induced reactions with aliphatic hydrocarbons with which the tetraethyllead was originally mixed.

Fluorine Studies. The Swarts reaction, namely, the interaction of an alkyl chloride with antimony trifluoride, has been used by Henne in the synthesis of fluorochloroethanes and fluorochloroethylenes. It will be recalled that dichlorodifluoromethane (CCl_2F_2) is a compound which has assumed recent industrial importance as a non-hazardous refrigerant. It is prepared similarly from carbon tetrachloride. Henne discovered a new method of making organic fluorides, namely, by treating an organic chloride or bromide with mercuric oxide and hydrogen fluoride.

BIBLIOGRAPHY *Chemical Abstracts*, vol 32 (1938); Henry Gilman and 27 collaborators, *Organic Chemistry, An Advanced Treatise*; J. W. Mellor, *A Comprehensive Treatise on Inorganic and Theoretical Chemistry*, vol. XVI, which finishes the treatise started in 1922 with the publication of vol. I. (C. D. Hu.)

CHEMISTRY, APPLIED. During 1938 the results of commercial importance through the application of chemical research maintained a volume of new products that compares favourably in quality as well as in number with those of previous years.

In the first rank must be placed the new synthetic material named nylon, destined to become as familiar as such names as silk or cotton. Nylon is the generic name for all materials defined scientifically as synthetic fibre-forming polymeric amides having a protein-like chemical structure ; derivable from coal, air, and water or other substances ; and characterized by extreme toughness and strength and the peculiar ability to be formed into fibres and into various shapes such as bristles and sheets, etc. The first commercial application of the new product is in the form of bristles for tooth-brushes These do not splinter or soften to any material extent and accelerated tests show them capable of giving service for a time far in excess of that characteristic of other bristles.

No one can foresee the many applications to which this synthetic organic polymer may be put, but it seems certain that it will compete as has no other fibre with natural silk. It excels silk in those characteristics which heretofore have set silk above man-made fibres The first commercial unit for the production of the fibre has been started and hosiery of nylon should become available in the autumn of 1939 It should be emphasized that nylon is the first truly synthetic textile fibre

Another new fibre is "Vinyarn", derived from vinyl compounds which in turn are based on acetylene and chlorine. An improvement in the better-known fibres is found in "Teca", a cellulose acetate fibre with a permanent crimp, and in mechanical improvements for handling viscose rayon which have greatly speeded the production of the fibre from the viscose mass.

Lanital, the wool-like fibre from casein, has been improved and in the United States a process has been devised enabling various grades of casein to be used, which is not the case with the Italian process. Research has gone forward in production of a similar fibre from the protein in soya beans, and research in another direction has produced a cellulose fibre spun directly from the alpha-cellulose, thereby effecting considerable saving in time and investment in stock in process as compared with the rayon industry.

Advances were made in glass textiles where some characteristics depend upon the fineness of the fibre. Glass fibre

tapes were employed to a considerable extent in the electrical industry and applications for the textile included improved anode bags needed in electrochemical industries A method was developed for depositing an excessively thin metal coating on fibres, giving promise of metal cloth for women's wear

Motor tyres with improved rayon cord made their appearance for private cars and came into intense competition with cotton cords subjected to a new process to impart improved heat resistance

A new wrapping film was invented enabling waterproof waxy compounds to adhere to it, thereby bringing about a film that withstands a month of immersion before the waterproofing layer separates from the cellulose film back A slight etherification of the cellulose constitutes the improvement

Progress continued in the petroleum field with increased production of polymer petrol formed from petroleum refinery gases, increased production of the synthetic fuel iso-octane, of importance to aviation, and the commercialization of a new catalytic process for petroleum hydrocarbon refining. Formerly the production of petrol from a given crude oil was accompanied by certain by-products for which there might not be an immediate market. The new process is held to be of greatest importance in that it enables independent production of petrol with or without other derivatives as may be desired. The process is essentially a method of breaking down the large molecules of crude oil and rebuilding smaller molecules to the right size and type to make up the desired product.

It was announced also that glycerol is now produced on a commercial scale synthetically from petroleum gases. The quality is high and the cost low enough to compete with by-product glycerol from the soap industry.

The use of two organic chemical compounds (thiourea and methylamine) was found to enable the deposition of silver from plating baths of far better brightness than heretofore. A high-speed process involving special salts and anodes enabled the production of smooth, bright, heavy coatings of cyanide copper.

Silver was proposed as a lining for certain tins and a plastic coating to resist acids, alkalies, and some alcohols was perfected for containers

It was also found that by varying the conditions of plating, a wide range of colours without the use of dyes could be obtained on certain base metals.

Crude turpentine was found useful in preparing fuel oil, both quick-starting and anti-knock, for Diesel engines. A non-crystallizing rosin and also a hydrogenated variety were prepared providing improved raw materials for soaps, protective coatings, and paper sizing.

It was found that silicates in oil drilling fluids are potent in preventing the scaling and dispersion of heaving shale.

A new method of whipping cream was introduced. The common whipped product is dependent upon mechanical action only as a means of entrapping gases in the form of bubbles within itself. The cream is charged with nitrous oxide under pressure, and when discharged through a small valve it is instantly whipped because the gas is less soluble at the lower pressure.

Further research on the concentration of benzol vapour required was a step towards the perfection of that process for the control of blue mould on tobacco plants.

A process was demonstrated for the separation of coal from slate and shale by a sink-and-float method employing synthetic organic chemicals.



[*Imperial Chemical Industries Ltd.*

A WORKER USING A COLORIMETER, ENABLING THE DETECTION OF ONE-HUNDRED-MILLIONTH OF A GRAMME OF IMPURITIES IN DYESTUFF PRODUCTS

A lacquer was perfected for the protection of plated chromium and another for the finishing of rubber.

Propionates were introduced on a commercial scale to inhibit moulds and rope in bread Vitamin progress included a process for concentrating vitamin A to a substantially pure product, the isolation of vitamin K which is the diet factor necessary for coagulation of blood, and the discovery that vitamin C may be formed from fatty substances although chemically it belongs in the starch group. Riboflavin, which is vitamin B_2 and vitamin G, and also vitamin E have been isolated and commercially produced.

The preparation of hundreds of compounds of sulphanilamide enabled many experiments to be made, indicating that a far wider control of infection is possible with these compounds than had originally been predicted.

It was found that certain bacteria will turn wood sugars into various chemicals on a commercial scale.

Improvements were made in the synthetic compound with rubber-like properties, neoprene, including elimination of objectionable odours Thiokol was produced on a larger scale and the resin ethyl cellulose and a polyvinyl acetyl plastic were commercially introduced. The latter gives high promise for use in safety glass and as a plastic cement for thermosetting resins and metals. Ethyl cellulose and other plastics have been made sufficiently flexible to be extruded as an insulation on wire where comparatively low voltage is employed.

A lamp of unusual brilliance was introduced, consisting of a small tube containing mercury vapour under high pressure surrounded by a quartz jacket through which water under high pressure circulates. The increased pressure changes the mercury vapour spectrum from the usual blue-violet to a white. Fluorescent lamps of high efficiency were also introduced.

Plant hormones used for promoting root growth were dusted on trees and found to promote, and in some cases substitute for pollination.

In the textile field new groups of softening and finishing agents have come from applied chemistry. They leave materials free from odour and discoloration, and have no harmful effects upon the dyestuffs. A long list of new solvents, synthetic in origin and derived for the most part from gas, petroleum, and coal have made their appearance,

and the list of wetting agents has been considerably extended The new chemicals, pigments, and compounds comprise a long list

New water repellents for textile finishing have been provided, as have additional compounds for water softening A number of interesting applications of synthetic materials have occurred The use of methyl methacrylate resins as roadside reflectors to mark the sides of highways by reflecting light from headlights has proved successful Rods of this resin have also been used for throwing light exactly where wanted in dental and other surgical operations Light introduced at one end of the rod is emitted from the other with no escape from the side walls

The latest devices for the measurement and analysis of light have been applied to ensure accuracy and constancy of colour where a great many items are involved—such as drawings for a coloured movie cartoon. It has been found that vitamin A will promote the production of visual purple, a deficiency of which prevents perfect colour matching where this must be done over a considerable period of time as in assembly of enamelled parts where colour matching is important

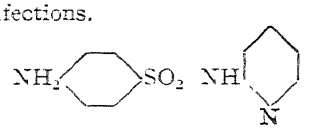
See Ross Aiken Gortner, *Outline of Biochemistry*, 2nd ed., New York; *Industrial Chemistry*, 2nd ed., New York (H E H.)

CHEMISTRY, INSTITUTE OF: *see* SOCIETIES, LEARNED

CHEMOTHERAPY. During 1938, chemotherapeutic investigations have chiefly been concerned with further studies of the sulphonamide group of drugs and their application in the treatment of infectious diseases in man and animals It is now generally agreed that prontosil and sulphanilamide are of the greatest value in the treatment of puerperal infections due to hæmolytic streptococci, although their role in prophylaxis is questionable. In the treatment of other infections due to hæmolytic streptococci, such as erysipelas, tonsillitis, otitis media, mastoiditis, meningitis, pneumonia, empyema and pyelitis, the same compounds are also of great benefit. Streptococcal cellulitis is less affected, while infections due to *Streptococcus viridans* show slight but only temporary improvement; infections of the urinary tract due to *Streptococcus fæcalis* are resistant to sulphonamide compounds, but are rapidly cured by mandelic acid. While staphylococcal infections show little improvement when treated by sulphanilamide and prontosil, those due to meningococci, gonococci and, to some extent, pneumococci react satisfactorily to sulphanilamide Chancroid, Brucella infections, and diseases of the urogenital tract due to *Bacterium coli* also undergo rapid improvement after sulphanilamide therapy, while observations suggest that the same may be true of bubonic plague. Further investigations are required to determine the value of sulphonamide compounds in the treatment of gas gangrene, typhoid, and tuberculosis. Sulphonamide compounds have been tested in a number of virus infections, such as anterior poliomyelitis, herpes, virus myxomatosum, the rabbit fibroma virus, yellow fever, and Rift Valley fever without success In only two virus diseases, trachoma and lymphogranuloma inguinale, is there evidence that sulphanilamide brings about cure. Some evidence has been obtained that clinical cure can be produced by sulphonamide compounds in monkey malaria, but in malaria in man it is doubtful whether they are of any value.

Among other sulphonamide compounds which are now being used clinically in man and domestic animals are: (i) prontosil soluble, the disodium salt of 4′-sulphonamidophenylazo-1-hydroxy-7-acetylaminonaphthalene-3 . 6-disulphonic acid; (ii) rubiazol, 2 4-diamino-6-carboxy-4′-sulphonamidoazobenzene; (iii) proseptasine *p*-benzylaminobenzenesulphonamide, (iv) uleron, *p*′-aminobenzenesulphonyl-*p*′-aminobenzenesulphondimethylamide, (v) rodilone, 4 4′-diacetylaminodiphenylsulphone; (vi) M and B 693, 2-*p*-aminobenzenesulphonamido-pyridine, and (vii) a glucose derivative of 4 4′-diaminodiphenylsulphone A number of other compounds have been shown to exert a therapeutic action in experimental streptococcal infections of Buttle *et al*., 1938

Uleron is being used in the treatment of gonorrhœa, and appears to be as if not more, effective than sulphanilamide, although it may produce neuritis rodilone has also been used, especially in France, in the treatment of gonorrhœa. M and B 693, 2-(*p*-aminobenzenesulphonamido)-pyridine, was found by Whitby (1938) to be especially active in pneumococcal infections in mice as well as in experimental streptococcal infections.



2-(*p*-aminobenzenesulphonamido)-pyridine
(M and B 693)

It has now been tested with satisfactory results in man in pneumonia, meningococcal meningitis and gonorrhœa

The glucose derivative of 4 : 4′-diaminodiphenylsulphone introduced by Buttle, Gray, and their colleagues (1938) may also prove to have wide clinical possibilities.

All sulphonamide drugs produce toxic reactions. Mild reactions, such as headache, fever, nausea, and cyanosis, are common, but skin lesions are rarer, while such alarming sequelæ as acute hæmolytic anæmia and agranulocytosis are extremely infrequent.

Evidence is accumulating that the sulphonamide group of drugs acts more satisfactorily in association with specific immune bodies. This and other evidence, such as the action of M and B 693 in removing the capsules of pneumococci, suggest that the sulphonamide drugs act directly on pathogenic bacteria by interfering with their metabolism (cf Levaditi, 1938, and Whitby, 1938 [2]) Further observations are required to determine whether bacteria may become resistant to the action of sulphonamide compounds.

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(G. M. F.)

CHEMURGY. the term was not applied until 1935, when it was coined by Dr. William J. Hale, an organic chemist who was the first of his profession to advocate greater use of farm crops, as an avenue toward enlarging national wealth. It signifies the application of chemistry to the expanded consumption of farm-grown raw materials for other purposes than food and clothing. Dr. Hale pointed out that except for a two or three per cent content of minerals actually extracted from the soil, all plant growth is simply moist air transformed by sunshine into solid substance; and that, therefore, wealth-producing potentialities are virtually unlimited, in addition to being independent of the irreplaceable characteristic of mineral deposits.

Although it has elicited interest in other countries, chemurgy has been adopted as a working principle chiefly in North America. In the United States it received its

first conspicuous endorsement by the government in 1938 The Agricultural Act of the year included an appropriation of $4,000,000 for the establishment of four regional research laboratories to seek "industrial and non-food" uses for farm products The chemurgic movement gained an international character with the announcement of the formation of a Dominion Chemurgic Council in the autumn, designed to promote increased utilization of Canadian crops

While few of chemurgy's proponents have ever maintained that it was more than one sound approach to the agricultural problem which obviously would advance slowly, developments during 1938 appeared to indicate that it may have a large share in the eventual enlargement of agricultural income

The perfection of processes for manufacture of starch from sweet potatoes and advance in commercial use of the processes promised that Southern States might be able to supply the entire requirements of the United States for high quality starches, the imported quantity of which in 1937 reached 466 million pounds The imported starches, originally required to supplement domestic corn and potato starch, are mainly the product of casava, arrowroot, and tapioca. The sweet-potato starch appears acceptable for all the required uses. A co-operatively owned factory at Laurel, Miss., is in production A new scientific advance was announced during 1938 in the form of a cheap dehydrating process, expected to permit the sweet potatoes to be stored and thus to permit all-year instead of seasonal operation. Two new potato starch plants were launched at Houlton, Me, to use surplus potatoes with improved processes.

A significant chemurgic development of 1938 was the successful financing of the first Southern mill for the manufacture of newsprint. The mill, a $6 millions enterprise, is being built at Lufkin, Texas Within three years seventeen new mills for the manufacture of kraft papers were announced, several of which have been in steady production

Research was continued at Atchison, Kan., into the possibilities of making anhydrous alcohol as a motor-fuel supplement from farm cereals and other crops. In November it was reported that 7,000 gal. of alcohol were being distributed daily through Middle Western filling stations. Inadequacy of funds had hampered the Chemical Foundation, sponsor for the research, in its effort to make a complete demonstration of the economic soundness of power alcohol, which has been questioned on various accounts. The motor-fuel market is in excess of 20,000 million gallons. Ten per cent of this—that being the rate at which the anhydrous alcohol is usually blended with petrol—would require 2,000 million gallons of alcohol, the making of which would use crops for around 25 million acres of farm land. These figures indicate the attractiveness of the power alcohol project to those agriculturalists who hope for its eventual success. The fact that petroleum is not only irreplaceable but known to be exhaustible has lent attractiveness to the thought of an annually renewable source of fuel for internal-combustion engines. Proposals to hasten the use of power alcohol by tax differentials, as well as proposals for compulsory use, have been urged. The prevailing belief probably is that such proposals should await thorough exploration of the costs of production and careful economic studies.

Interest in the castor bean as a potential farm crop was stimulated during 1938 by a new process of dehydrating castor oil, converting it into a drying oil pronounced virtually equivalent in its qualities to tung oil. Research has also been conducted into the value of the castor bean stalk for cellulose, of the outer fibre, and of parts of the plant believed to have insecticidal values

At the U S. Regional Soybean Industrial Products Laboratory, Urbane, Ill., extensive research was continued into industrial uses for soya beans. Advances were reported in the use of the oil for paints and varnishes, especially with reference to quicker-drying qualities, and in the use of soya bean protein for plastics. A notable step was the discovery that proper hardening with formaldehyde of soya bean protein makes possible the production of a thermoplastic material.

In the laboratories of the Ford Motor Company research was instituted in an effort to produce from soya bean case in a fibre suitable for upholstery. Encouraging results have been reported. Increased quantities of soya bean material were used in plastics, in foundry cores, fire-resistant paints, in stearic acid and glycerin, as well as in enamels and other automobile essentials

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CHESS. In England 1938 was a year of misfortune for chess on the executive side. The British Chess Federation lost by death, among others its president, Canon A G Gordon Ross, M.A.; its chairman, Major E. Montague Jones; Mr H. E. Dobell, hon. treasurer for 25 years, Mr. R. P. Michell, a member of the executive and one of Britain's leading players for forty years. Mr. J. F. Chance, president of the Imperial Chess Club, was also among those who have passed away Finally, Mr L. P. Rees retired from his office of hon. secretary of the British Chess Federation after very active and arduous service for 35 years

The new officers of the Federation are. president, the Hon. F G. Hamilton-Russell (formerly hon. treas.), deputy president, J N. Derbyshire; hon. treasurer, G S. A. Wheatcroft, and hon. sec., R. H. S. Stevenson, who, it is interesting to note, in Oct 1937 became the husband of Miss Vera Menchik, winner of the world's women's championship at Prague in 1931.



Fox Photos]

S. RESHEVSKY, U.S.A. CHESS CHAMPION

* World Champion
† Ex-World Champion
‡ U.S.A. Champion

Master	Country	Fine	Keres	Botwinnik	Alekhine	Euwe	Reshevsky	Capablanca	Flohr	Won	Lost	Drawn	Points
FINE	U.S.A.	—	—	x	D	W	D	W	W	W	x	W	x	D	D	W	D	6	3	5	8½
KERES	Estonia	W	D	—	—	D	D	D	D	D	D	W	D	W	D	D	D	3	—	11	8½
BOTWINNIK	U.S.S.R.	x	D	D	D	—	—	W	D	D	x	W	D	D	W	D	D	3	2	9	7½
ALEKHINE*	France	x	x	D	D	x	D	—	—	W	D	D	D	D	W	D	W	3	3	8	7
EUWE†	Holland	x	W	D	D	D	W	x	D	—	—	x	D	x	W	W	D	4	4	6	7
RESHEVSKY‡	U.S.A.	x	W	x	D	x	D	D	D	W	D	—	—	D	D	W	D	3	3	8	7
CAPABLANCA*	Cuba	D	D	x	D	D	x	D	x	W	x	D	D	—	—	D	W	2	4	8	6
FLOHR	Czechoslovakia	x	D	D	D	D	D	D	x	x	D	x	D	D	x	—	—	—	5	9	4½

International tournaments were held during the 1938 season at Łódz (March–April) and Noordwijk (June), while the Plymouth Jubilee Congress (Sept. 5–10), in which Dr. Alekhine and the two Dutch internationals, L. Prins and T. D. Van Scheltinga, took part, may almost rank as such. At Łódz V. Pirc (Yugoslavia) took first place with 11½ points, Dr. Tartakover (Poland) was second with 10, and V. Petrov (Latvia), E. Eliskases (Germany, late Austria), and G. Stahlberg (Sweden) tied for third with 9½ points. Mrs. Stevenson was the only British representative. Eliskases, who defeated the former world's champion, Dr. Euwe, in the last round, was the winner at Noordwijk with 7½ points out of a possible 9; P. Keres (Estonia) was second with 6½, and Sir George Thomas, the only British entrant, seventh with 4. At the Plymouth Congress, which attracted over 100 players, Sir George Thomas and Dr. Alekhine shared first prize with 6 points each, neither losing a game. The remaining scores in the premier tournament were: P. S. Milner-Barry and P. M. List, 3½; Mrs. Stevenson, 3; H. V. Mallison and G. S. A. Wheatcroft, 2½; R. M. Bruce, 1. In the spring a tournament was held at Ljubljana, Yugoslavia, in which first place was taken by B. Kositch (10½ points), second by L. Szabo (10), and Dr. Tartakover and L. Steiner were bracketed third, with 9½.

The fourth Margate Easter Congress broke the record for any British meeting with 180 competitors. Dr. Alekhine won the premier with 7 points, and was followed by R. Spielmann (Austria), 6; V. Petrov (Latvia), 5½; and E. Book (Finland) and P. S. Milner-Barry, with 5 each. A "test" match, England *v.* Holland, was won by England, 5½–4½, after a draw of 5-all.

The British championship (Brighton, Aug. 8–19) was won by the brilliant young player C. H. O'D. Alexander (8 points), who had tied for second place at the 18th Hastings Congress, which finished on Jan. 6 (*see Ency. Brit. Book of the Year*, 1938, p. 149). H. Golembek and E. G. Sergeant were second (7½), and Mrs. Stevenson, the first woman to play in the championship, seventh with 5½. The British Ladies' championship went to Miss Musgrave, of Hastings, the City of London Chess Club's to E. A. Sergeant; and Lancashire, with Surrey running them close, won the Inter-County championship for the seventh time, being surpassed only by Middlesex, which has thirteen wins. E. Eliskases won the German championship (16 entries), and Dr. Euwe the Dutch (12 entries).

The year closed with one of the most important events in the history of the game, the double round tournament, arranged by the Avro Company of the Netherlands, between the eight leading masters, played in various towns of Holland from Nov. 6 to 26. As will be seen from the table above (in which W = won, D = drawn, and x = lost), honours went to the younger players, Fine and Keres—the latter of whom did not lose a single game—who were bracketed first.

It should be noted that Salo Flohr, who finished last in the above tournament, was in Aug. 1937 chosen by the International Chess Federation as official challenger to Dr. Alekhine's title of world champion, but at the end of 1938 it seemed more probable that Keres would be accorded that honour. (L. H. D.)

CHIANG KAI-SHEK (1886–), Chinese general and political leader, a native of Ningpo, Chekiang province. An account of his career may be found in the *Ency. Brit. Book of the Year*, 1938, p. 149. Despite the military reverses which by the end of 1937 had led to Japanese occupation of most Chinese territory north of the Yellow River and of the Shanghai-Nanking area, Chiang Kai-shek gave no indications of a desire to sue for peace. He maintained this steadfast attitude throughout 1938. After the fall of Canton and Hankow he issued a message to the Chinese people, declaring that it is better to be "a broken jade than a whole tile", and predicting ultimate victory as a result of Japanese exhaustion. He also forecast a new Chinese strategy of mobile attacks on the Japanese lines at various points by small bodies of troops. His prestige in Nationalist China remained undiminished, and a Kuomintang congress in March 1938 gave him the title of Tsung Tsai, literally "general planner", which carried an implication of dictatorial authority. (*See* also SINO-JAPANESE WAR.) (W. H. CH.)

CHICAGO. American city, port of entry, county seat of Cook county, Ill. The population of the city proper at the last Federal census was 3,376,438 inhabitants; that of the entire metropolitan area (1,119·29 sq. miles) 4,364,755.

After half a century of bitter political business and engineering controversy, construction was begun on Dec. 1, 1938, of an underground railway to provide better communication with the centre for this population, which had been dispersing into suburban areas at an increasing rate all the while transport facilities were lagging behind the needs of the city. The initial project for the underground calls for an expenditure of $40 millions, of which the Federal Public Works Administration contributed $18 millions, the remainder being taken from the city's traction fund made up of money paid under contracts with surface street railway lines. The tubes now under construction in State and Dearborn streets and Milwaukee Avenue will connect with existing lines of elevated railway.

Lack of housing was being partially remedied by a marked gain of residential construction in the latter months of 1938, a gain stimulated by the enactment of a more modern building code after delays which blocked progress for more than twenty years.

On Sept. 7, the new controlling works and lock at the



United States Lines]

AERIAL VIEW OF CHICAGO

mouth of the Chicago River were opened to navigation. Completion of these works and practical completion of 75 miles of new sewers, with sewage treatment plants and other structures, prepared the city for the reduction of 1,500 cu ft per second of water diverted from Lake Michigan, ordered to go into effect on Jan. 1, 1939, by the United States Supreme Court The entire programme of reduced diversion cost $58 millions, of which $42 millions was provided in loans and grants by the Federal Public Works Administration.

Chicago shared with the rest of the nation a substantial business recovery beginning in May 1938 Continued unemployment and large outlays for relief of the destitute were, however, the outstanding features of the labour situation.

Labour strife was at a low ebb throughout the year with no large numbers of workers on strike at any time, although a strike of a few hundred livestock handlers at the Union Stockyards closed that great livestock market for several days in November. The strike was settled by negotiation and did not interfere with the annual International Livestock exposition, which attracts visitors and animals from all parts of North America

The war on crime by State's attorney Thomas J. Courtney was carried on with continued success, and indictments pending against criminals were at the lowest figure ever recorded in Aug. 1938 A total of 1,269 defendants were sent to State prison and 90 per cent of all those tried were convicted. Murderers convicted totalled 75, of whom three were sentenced to death. Speed of trials in 1938 reached a point where 68 per cent of all criminals arrested were tried within thirty days of their offences.

In the State and national elections of 1938 Chicago favoured the Democratic party by substantial majorities. The last Republican members of the Municipal Court were removed by defeat at the polls. With the exception of suburban town and village officials, and suburban members of the Cook county board, the entire political administration is Democratic—a degree of party domination unique in the city's history.

CHILD LABOUR. While, up to Dec 1938, 28 States had reported ratification of the Washington (1919) Convention setting up fourteen as the minimum age for employment in industry, there are still a number of countries where children begin work at twelve or even earlier In Great Britain important changes in regard to juvenile employment were imposed by the Factories Act, 1937, which came into force in July 1938, and requires boys and girls under sixteen to be released from six o'clock in the evening, and by the Young Persons (Employment) Act, 1938, which limits the total number of hours which may be worked by a young person under the age of sixteen to not exceeding 44 It is estimated that at least 125,000 boys and girls will be affected by these two Acts The gap in the health services which formerly existed between school-leaving and entry into National Health Insurance was bridged when, in April, the National Insurance (Juvenile Contributors and Young Persons) Act, 1937, came into force, providing medical services for nearly one million employed juveniles

The parliament of Northern Ireland, in following the example of Great Britain in raising the school-leaving age, introduced a new factor in regard to "beneficial employment" of children, they may be employed half-time, provided they also give half-time attendance at a technical class with a minimum of fifteen hours per week. Meanwhile, in the same country, the Committee on the Instruction of Unemployed Juveniles reported in favour of the continued attendance of such juveniles at school or at junior classes specially provided.

In Switzerland, a Federal Law on the minimum age for workers, passed in June 1938, prescribes fifteen years as the minimum age for employment in certain industries In certain cantons where school attendance is compulsory up to fifteen or sixteen years, the new law will involve no change, but there are a number of cantons with a school-leaving age of between fourteen and fifteen years, and here many thousands of children were accustomed to enter artisan life or industry at these ages

Germany has also passed a new labour law (April 1938) which prohibits child labour in principle, but admits certain exceptions and imposes restrictions up to the age of sixteen. Thus, children of the age of twelve upwards may be employed for a maximum of two hours a day during school terms and four hours during holidays. Night work is prohibited up to the age of eighteen, and paid holidays for juveniles are provided for. (E F.)

The most important action in 1938 for the elimination of child labour in the United States was the passage by Congress of the Fair Labour Standards Act, which became effective on Oct. 24 This Act, in addition to fixing minimum wages and maximum hours of work, also prohibits "oppressive child labour" in industries "engaged in commerce or in the production of goods for commerce". Oppressive child labour is defined as employment of a minor under the age of sixteen years in any occupation, or employing a minor between sixteen and eighteen years of age in any occupation which the chief of the Children's Bureau finds to be hazardous or detrimental to the "health and well-being" of minors of that age It is not oppressive child labour under the act: (1) to employ children under sixteen in agriculture when they are not legally required to attend school; (2) to employ children as actors in motion pictures or theatrical productions; or (3) for a parent to employ his own child in an occupation other than manufacturing or mining

In addition to this act the United States Senate ratified on June 13 an International Labour Convention fixing fifteen as the minimum age for admission to employment on the high seas By 1938 ten States had established sixteen as the minimum age for employment (G AB)

CHILD WELFARE. The League of Nations Advisory Committee on Social Questions, which includes the former Child Welfare Committee, at its 1938 meeting reaffirmed its adherence to the Declaration of Geneva (Declaration of the Rights of the Child). The special subjects of consideration by sub-committees were the boarding-out of children in families, the recreational aspects of the cinema, the position of the illegitimate child, and the protection of children in time of war Boarding-out had been the subject of a world survey during the years 1936–38, in which 42 countries collaborated, and the conclusions of the report—a valuable summary of the standards which have found world-wide acceptance—were unanimously endorsed by the committee. Important child welfare conferences were the thirteenth congress of the Association Internationale pour la Protection de l'Enfance (of Brussels), held at Frankfurt-on-Main in June and attended by 545 delegates of 24 nations; the second Balkan Conference on Child Welfare, under the auspices of the Save the Children International Union of Geneva, held at Belgrade in October, and attended by over 200 delegates; and the British National Conference on Maternity and Child Welfare, under the patronage of Queen Mary and the Ministry of Health, which brought over 500 delegates to Bristol.

Public concern at the falling birth-rate in Great Britain, not materially affected by a slight tendency to rise during the last two years, found expression in the Population Act, 1938. This Act, which followed precedents set by New Zealand, Australia, and several European countries, is designed to ascertain facts about parenthood, and to find out what assists or impedes fertility. The falling birth-rate was also one of the principal subjects of discussion at the National Conference on Maternity and Child Welfare. An important measure which passed its second reading was the Adoption of Children (Regulation) Bill, 1938, which provides safeguards (by way of inspection of homes and medical examination of children) for the health and welfare of children who are the subject of adoption orders. Attention was focused on the growing practice of leaving children alone in the house during the parents' absence, with grave physical and psychological risks. The National Society for the Prevention of Cruelty to Children suggested that the law should be amended to deal with the problem, possibly through local maternity and child welfare committees. Arrangements were made in four places in the Special Areas (the Rhondda, Whitehaven, Jarrow, and Walker-on-Tyne), whereby the maternity and child welfare authorities started cheap-milk schemes in conjunction with the Milk Marketing Board. A pint of milk per day was made available to expectant and nursing mothers and to children under school age at a cost of twopence. The milk is delivered to the homes by the retailer, on the order of the Medical Officer of Health, and the Children's Minimum Council is pressing for the extension of this experimental scheme to the whole country.

Two significant recommendations relating to the foundations of child welfare work may be recorded. At the tenth Pan-American Sanitary Conference at Bogota (Colombia) in September, the compulsory notification of pregnancy was recommended; and the adoption by maternity institutions and public health authorities of a definition of *prematurity*



London County Council]
NURSERY SCHOOL AT MILE END, LONDON

as a birth weight of 5½ lb (approximately 2,500 grammes) or less was recommended by the British College of Obstetricians and Gynæcologists

Typical of the increased emphasis which governments are placing on child welfare was the action of the French Supreme Council for Child Welfare, set up under a Decree of September 1937, in making its first task the codification of all laws, regulations, etc, concerning children. In Belgium the Civil Code as it relates to illegitimate children was modified by a new law of March 1938, whereunder the powers of the patronage organizations for the care of such children were extended, and in Hungary special attention was given, through the welfare centres, to what is described as a "population policy" aiming at "more and better Hungarians".

Maternity allowances were introduced in Sweden and in Greece; and, under the comprehensive Social Security Act, 1938, in New Zealand. In Ontario (Canada) the Needy Mothers' Assistance Act provides benefits for women with at least two dependent children.

Germany, where both maternity benefit insurance and the organization of welfare work are on a voluntary basis, increased to over 23,409 its permanent maternity and child welfare centres under the mother and child section of the National Socialist Welfare Organization (E. F.)

It is impossible to evaluate in brief compass trends and conditions throughout the world in their effect on the well-being and happiness of children. On the one hand, children suffered from war and threat of war; from denial of rights and opportunities which had been regarded as elemental and inviolable; and from lack of balance between resources and facilities devoted to the care and protection of children and those available to other groups in the population. On the other hand, gains were made in certain international and national measures for child welfare, and public interest in the conditions in which children come into the world and receive nurture and training during the years of immaturity mounted as the issues which will determine the destinies of nations and of peoples became more clearly defined.

The year 1938 was the second full year of operation of the Social Security Act in the United States, under which

the State and the Federal government co-operate in providing maternal and child health services, crippled children's services, and child welfare services Federal aid has made possible marked improvement and extension of these services for children, but great needs for further health protection and for medical care remain unmet. Recommendations for amendment to the Social Security Act to provide increased resources for maternal and child health have been made by advisory committees to the Children's Bureau, the State and Territorial health officers, the Conference on Better Care for Mothers and Babies held in Washington in Jan. 1938 under the auspices of the Children's Bureau, and the National Health Conference held in July at the suggestion of the President to consider a national health programme.

Recommendations for strengthening the provisions of the United States Social Security Act relating to aid to needy dependent children have been made by the Social Security Board and transmitted to Congress by the President. According to the recommendations, the ratio of Federal contribution should be increased from one-third to one-half, the maximum amounts specified in the law should be raised, and the age limit for aid to children regularly attending school should be raised from ten to eighteen years Under existing provisions relatively greater assistance is given to the needy aged than to needy dependent children

Under a law effective in 1939, the national government of Sweden is to make grants to the provinces of that country for providing dental care, free or at a nominal charge, to adults and children. The Brazilian government established an Institute of Child Care, which will be a centre for research and education The French government provided for the establishment of "preventoriums" for children and adolescents with mild forms of tuberculosis

Australia enacted a social insurance law requiring every person more than fourteen years of age, who is in private employment, to be insured. In return for the premiums paid by them each insured person will receive medical services and cash payments in case of illness, and an old-age pension when he is eligible for it. Payments are also made under specified conditions to survivors of insured persons, including orphans less than fifteen years of age

A new Federal juvenile-delinquency act went into effect in the United States, applying to persons seventeen years of age or under who commit offences under Federal law (not punishable by death or life imprisonment), though many elements of criminal procedure are retained. A modern juvenile-court act for the District of Columbia was enacted. Marked improvements in laws relating to State and local public services for children were made in Louisiana, Massachusetts, Mississippi, and Virginia. (*See* also JUVENILE DELINQUENCY.)

Switzerland's new Federal penal code, to be effective Jan. 1, 1942, lays down general rules for the cantons to follow in dealing with juvenile delinquency, leaving the details to individual cantons. The Brazilian government provided for establishment of a National Council of Social Service. Supervision of all children under fourteen boarded in foster homes in France was provided for in a decree in June. Previously such supervision was given only to children under two years of age. President Roosevelt sent to the U.S. Congress for ratification two conventions adopted at the 1937 session of the International Labour Organization. These provide for a basic minimum age of fifteen years for employment of children in both industrial and non-industrial occupations, exclusive of agricultural and maritime work, and for a higher minimum age in occupations that may be determined to be hazardous or unhealthful for young workers. The convention providing for a fifteen-year minimum age in industrial occupations was ratified by the Norwegian parliament. (K F. L)

CHILDREN'S BOOKS. Many of the books for children published in Great Britain in 1938 are remarkably well produced and illustrated Such a tendency has been noticeable in America for some time, and English publishers are making great headway in this direction The use of lithography, in both black and white and in colour, gives added beauty to the work of the artists who are giving their attention to book illustration Especially in books for the very young reader, pictures are as important as the story.

The most successful writers for very small people are those who make animals their heroes. Small children accept animals on equal terms, without any sense of superiority or patronage. This accounts for the success of stories in which animals talk and take part in the human world. M de Brunhoff, in *Babar at home*, the further adventures of Babar the Elephant, Molly Kaye, in *Black Bramble Wood*, and Kathleen Hale, in *Orlando, the marmalade cat*, are among the best of such writers, and all these books have gay illustrations and clear type.

Older children like stories of real animals in the wild. *Red Ben, the Fox of Oakridge*, by J. W Lippincott; *The Grey Hare*, by Svend Fleuron; and *Tawny goes hunting*, by Allen Chaffee, are excellent.

The adventures of those lucky children who have ponies to ride are told by Joanna Garland, in *Another pony for Jean*, and in *Fortune's foal*, by G. Bullivant. Out-of-door activities are the subject of some of the best of the recent children's books, for the joys of exploring, camping, and caravanning are now familiar to the young folk

The Compass always points North, by M. E. Atkinson, and a second book by the young authors of *The far-distant Oxus*, Katherine Hull and Pamela Whitlock, called *Escape to Persia*, are stories of youthful adventure far from city streets, exciting without the meretricious aid of buried treasure or hidden passages

The fairy tale still has its place. Patricia Lynch, in *King of the tinkers*, has re-created an enchanted Ireland of changelings and leprechauns, in which Cuchulain and the ancient warriors "come into the hours of the present from the days of the past" and take part in the wild free life of the tinkers.

Older girls—and their elders—will enjoy *She shall have music*, by Kitty Barne. The writing and the delineation of character are perfect, and the pencil drawings subtly underline the humour.

In a third book on Chinese life, Elizabeth Foreman Lewis has written an excellent story, *China quest*, which will create a feeling of friendliness and understanding towards a foreign people.

There are two good school stories: for girls—*Alison Temple, prefect*, by Winifred Darch; for boys—*King Willow*, by George Mills. In both the interest is in the characters, not in improbable events Boys who like historical stories will find excitement in *Who rides in the dark? Dickon of the Lenape Indians*, by M. R. Harrington, and *Tal of the Four Tribes*, by Herbert Best, are both good. Finally there is a fine collection of *Stories for girls*, edited by Kathleen Lines, including work by many authors of literary distinction. (R. E. BA.)

United States. Publications for 1938 averaged well in general content and were more conservative in format

than in the preceding year Emphasis was continued on books for little children, but important books appeared in other classes The annual John Newbery Medal was awarded in June to Kate Seredy for her epic legend *The White Stag* as the most distinguished contribution to American children's literature during 1937 The first annual award for the most distinguished American picture book of 1937 was won by Dorothy Lathrop, illustrator of *Animals of the Bible*, the text of which was selected from the Authorized version of the Bible by Helen Dean Fish. Miss Lathrop is a well-known artist and author, having many other admirable books to her credit .

Among current picture-books the names of many earlier producers were repeated Monro Leaf and Robert Lawson followed their *Ferdinand* by *Wee Gillis*, a rollicking Scotch tale in pictures and text that appeal immediately to children's interests. Kurt Wiese is found at his best in his illustrations for Alice Alison Lide's *Yanka-tu the Yak*, a simple, informative story reflecting Tibetan life and customs Another leading picture-book was *The Forest Pool* by Laura Armer, which graphically conveys the beauty of an old Mexican jungle by means of a simple story of adventure and full-page illustrations in rich colour *Mei Li* by Thomas Handforth was an attractive contribution to the picture-book age and those older. For originality and imaginative quality, *Quito Express* by Ludwig Bemelmans deserves special mention. *East of the Sun and West of the Moon*, a selection of Norwegian tales edited from the Dasent translation by Ingri and Edgar Parin d'Aulaure and illustrated by them, was one of the most beautiful books of the year.

While picture-books with foreign backgrounds held first place in the year's output, biography was not far behind. *Leader by Destiny* by Jeanette Eaton proved an excellent account of the human George Washington. *Penn* by Elizabeth Janet Gray was another equally absorbing life-story exceptionally well told. *The Young Brontës* by Mary Louise Jordan revealed the childhood of that amazing family. Following their series of musical biographies for younger children, Sybil Deucher and Opal Wheeler produced an artist biography in *Giotto Tended the Sheep*.

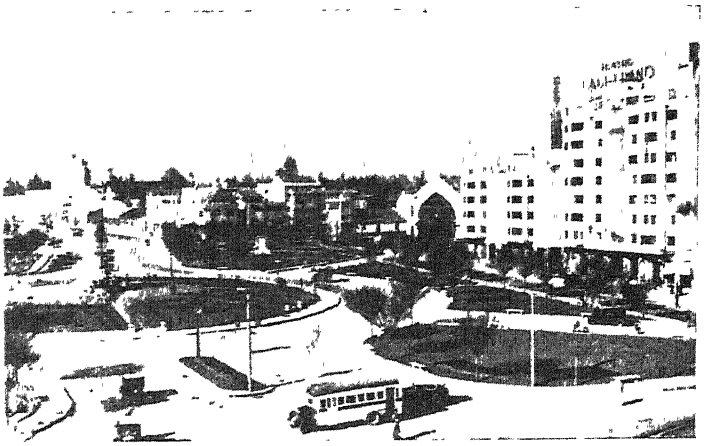
Books in the fields of science and useful arts emphasized actual experiences in occupations, travel, and exploration. *T-model Tommy* by Stephen Meader, *French Canada* by Hazel Boswell, *At Grips with Everest* by Stanley Snaith, *The Baby Giant Panda* by Ruth Harkness, *The Book of Insect Oddities* by Raymond L. Ditmars are examples.

Outstanding fiction included *We Didn't Mean to Go to Sea* by Arthur Ransome, *Benja's Hat* by Mabel Leigh Hunt, *At the Sign of the Golden Compass* by Eric Kelly, *The Hobbit* by J. R. R. Tolkien, and *Bound Girl of Cobble Hill* by Lois Lenski.

The Song of Roland, a prose translation from the Old French by Dr. Meriam Sherwood, was the finest contribution to literary classics for young people. An important bibliography was *From Peter Parley to Penrod* by Jacob Blanck.

Total juvenile publications (not including pamphlets, textbooks and new editions) were: United States 895, England 969. Some of the books referred to were published in both countries, simultaneously, or at close intervals

CHILE, a republic on the west coast of South America; language, Spanish; president, Pedro Aguirre Cerda; area, 289,776 sq. m. Population (Dec. 31, 1937) 4,287,445, with more North European elements than any other Hispanic-American country, German-Chileans being preponderant in some sections. The chief cities are: Santiago, the capital (843,870), Valparaiso, the principal port (approx 200,000).



Chilean Consulate London]

SANTIAGO, CHILE

With a presidential election due in October, 1938, the several Chilean political parties had united into two groups, roughly "Right" and "Left", with the Left, or Popular Front, as originally constituted including the Communist and Chilean Nazi ("Nacista") parties, although the latter tended toward independent action. President Alessandri had become a moderate and associated with the Conservative Right, and supported as his successor Gustavo Ross, minister of finance and reputedly the wealthiest man in Chile. The opposing candidate was Pedro Aguirre Cerda, a millionaire landowner, choice of the Popular Front.

From the beginning of the year the Nacistas, headed by Jorge González von Maree, began to harass the government and to attempt to publicize their party platform. A sensation was created at the opening of Congress in May when González von Maree, a member of Congress, interrupted the President's speech by firing a pistol shot In the gardens of the Palace of Congress, a bomb was exploded. González was arrested, but released. On Sept. 5, as the campaign was approaching white heat, a Nacista *coup d'état* was attempted. Public buildings were seized, but after four hours of fighting the rebels were suppressed. The death roll was 62.

Subsequent investigation showed that the revolutionaries had planned to assassinate both Alessandri and Ross. Government precautions were therefore taken against further troubles. President Alessandri was given extraordinary powers, press censorship was imposed, and a four-months' state of siege proclaimed. The latter, however, was lifted for the final 20 days of the election campaign, and later reinstituted, but without censorship. Carlos Ibáñez, former president, who was closely associated with the Nacistas, was accused of complicity and arrested; as were González von Maree and other Nacistas. González was sentenced to 20 years' imprisonment and perpetual disbarment from public office; others of his party received terms of imprisonment. Ibáñez was released on Oct. 23, on the eve of the presidential election, and left the country.

The essential issues of the political campaign between Ross and Aguirre were those of conservatism and liberalism, with business interests behind Ross, and agricultural and debtor interests preferring Aguirre and further inflation. Contrary to the expectation of political observers, Aguirre was the victor with a majority of 4,000 votes on a total of 500,000. The election eve endorsement of Aguirre by the Nacistas, who controlled an estimated 15,000 votes, was

regarded as having turned the scale Immediately after the election the issue was so much in doubt that Ross demanded a recount, but leftist demonstrations against " government interference ", and the possibility of revolution, caused him, in a fashion typical of Chilean fair play, to concede the election Ross himself then left the country for an extended rest abroad On Dec 24 Pedro Aguirre Cerda was formally inaugurated president of Chile. The new administration, the first Popular Front government organized as such to come into power in the Western Hemisphere, began forthwith to effect changes. The new president immediately pardoned Jorge Gonzalez von Maree and all others implicated in the abortive September revolt, restoring full political rights to them. On December 27, seven generals who had been prominent in suppressing that rising, among them the chief of staff, were retired from active service. Ex-president Alessandri, forbidden by the Constitution to leave the country for six months after the close of his term without permission of Congress, was granted leave to rest in Europe A nation-wide reduction in bread prices was decreed, and the working day of government employees increased to eight hours Formal recognition of the Soviet Union was recommended to Congress, but had not been acted upon at the close of the year. On Dec 31, ex-president Ibánez, who had been in voluntary exile in Argentina since his release from prison in October, returned by air and was welcomed by uniformed Nacistas.

Education. Primary education is free, non-sectarian, and compulsory. In 1937 there were 3,467 primary schools (enrolment, 447,717), 85 secondary (enrolment, 29,062), and numerous special schools. There are three universities, the National university of Chile and two parochial universities, with a total enrolment of 6,454 in 1937.

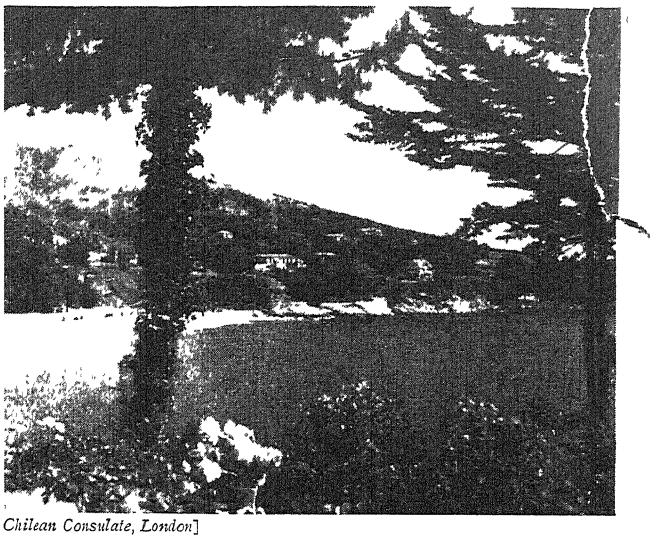
Defence. Chile has an army of 29,435 men, with a reserve of 177,434 The navy consists of a single battleship and numerous secondary ships. It was formerly the most up to date in South America, but has declined considerably. During 1938 bids for two modern cruisers were opened. Chile has over 75 military planes.

Finances. The monetary unit is the peso (value: approx *2d*). The 1938 budget called for the sum of 1,620,981,000 pesos.

Trade and Communications. Freight service on the Trans-Andine line by way of Uspallata pass, suspended since interruption by landslides in Jan. 1934, is in process of re-establishment. Railways connect the northern ports of Arica and Antofagasta with Peru and Bolivia. An all-the-year highway from Lima (Peru) to Valparaiso exists. Highway communication to Argentina across the Andes is open except during the winter, but plans for utilization of already existing railroad tunnels through the Andes are expected to make winter use possible.

A railway system of 5,113 miles length and largely government-owned, extends to Puerto Montt in the south. Plans are under way for partial electrification and for streamlining trains on government-owned lines. Communication with the far south is primarily by boat and aeroplane. Air transport service is well developed, with routes totalling 2,666 miles in length. A highway system of over 12,000 miles length, including 2,300 miles of first-class roads, is being rapidly developed under a comprehensive programme adopted in 1937.

The Chilean merchant marine is the largest of any Hispanic-American country, and carried about 6 per cent of Chilean water commerce. A new government-supported Chilean navigation line was inaugurated in Feb. 1938.



Chilean Consulate, London]
ZAPALLAN, THE CHILEAN SUMMER RESORT

Chilean foreign trade in 1937 exceeded that of 1936 by 51 per cent Exports (947,789,000 pesos) were 68 per cent greater, and imports (428,866,000 pesos) 24 per cent. Imports came principally from the United States (29 1 per cent); Germany (26 per cent); Great Britain (10·9 per cent); and Peru (8·1 per cent). Exports went especially to the United States (23·1 per cent); Great Britain (19·8 per cent); Germany (9·5 per cent); Belgium (5·9 per cent), France (4·9 per cent); Italy (4·4 per cent), Sweden (3·8 per cent), with all but France increasing their proportions over 1936. The first nine months of 1938 showed imports increasing by 28 per cent, exports experienced a sharp drop (34 per cent), due to a decline in copper, to 508,800,000 pesos for the period.

Imports are predominantly textiles and machinery. Exports are chiefly mineral products (copper 54 per cent, nitrates 20·3 per cent, other minerals 6·3 per cent, in 1937); non-mineral exports are wool, frozen meats, and hides, and miscellaneous agricultural products, especially wine, cereals, and legumes.

Agriculture, Manufactures, Mineral Production. Mineral production is chiefly of copper and nitrates, with totals dependent upon foreign demand and consequently shifting violently from year to year. Copper production in 1937 (413,185,666 kg.) was the greatest on record, in 1936 it amounted to 15 36 per cent of the world total. Production in the first nine months of 1938 declined 16 per cent, but exports fell off much more. In 1936–37 Chile produced 1,315,200 metric tons of nitrates and by-products. Chile is the only important coal producer in South America (nearly 4,000,000 metric tons in 1937), and produces 75 per cent of the continent's output, almost exclusively for domestic consumption. During 1937, 9,815,026 grams of gold was produced, an all-time record

Although minerals are the chief exports, agriculture is the leading industry, with its products largely for domestic consumption. For the season 1938–39, 1,700,000 acres were sown in cereals, primarily wheat, with considerable oats and barley. Potatoes and various legumes are grown extensively. In 1936 there were 251,600 acres devoted to viniculture. The pastoral industry is important in the south, with cattle and sheep the principal animals. Textiles are the principal manufacture, with cement and electric power next.

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CHINA. Excluding those areas over which no effective Chinese sovereignty has been exercised for many years (Manchukuo, Outer Mongolia, Tibet), China has an area of 2,845,740 sq. miles and a population of 418,479,000 (estimate of directorate of statistics in Nanking). No comprehensive census has ever been taken. Population of larger cities: Nanking (estimated, 1937), 1,000,000; Shanghai (foreign and Chinese administrative areas reckoned together, census of 1935), 3,490,762; Peking, 1,487,289; Canton, 861,024; Hankow, 777,993; Tsingtao, 440,135.

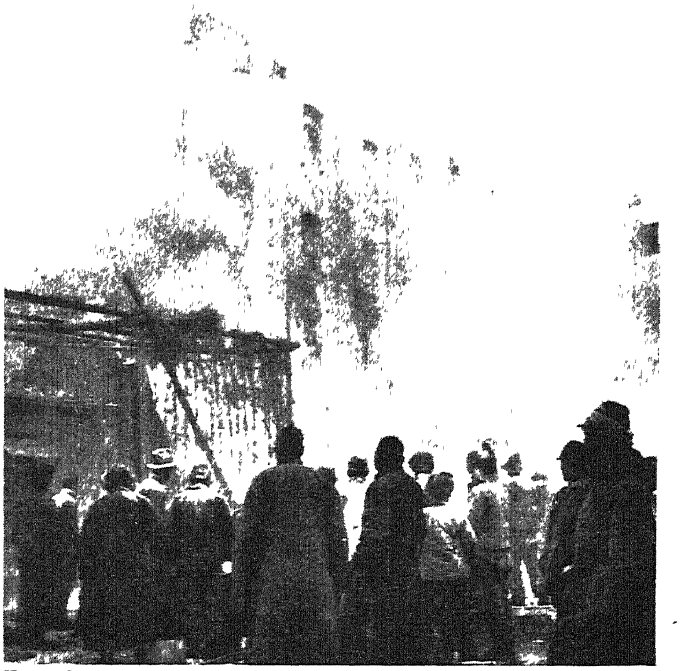
For the Sino-Japanese war, *see* that heading. A so-called People's Political Council consisting of delegates elected from various provinces, held several meetings during 1938 and was regarded as an unofficial agency of popular expression.

Education and Religion. Normal educational activity has been seriously affected by the war and the movement of vast numbers of refugees from one part of the country to another. There has been a transfer of higher educational institutions from such occupied cities as Peking, Nanking, Shanghai, and Tientsin to towns in the remote interior, such as Chengtu in Szechuen, and Kunming in Yunnan. Optimistic observers see compensation for the dislocation of life in the Japanese occupied regions through the spread of education and enlightenment in the formerly backward interior.

China's main religions are Buddhism, Taoism, and Confucianism. There are between 5,000,000 and 10,000,000 Mohammedans, mostly in the north-western and far-western provinces of the country. There were 2,818,839 Catholics and 512,873 Protestants in China at the beginning of 1935.

Army. On the eve of the outbreak of the Sino-Japanese war the Chinese armed forces, organized in sixteen route armies and 51 armies (the route armies are larger military units) consisted of 2,271,330 men, of whom 1,996,920 were under the direct control of the National Government, the remainder constituting provincial forces. There are no reliable reports of the forces engaged or of casualties in the present hostilities. Chiang Kai-shek is believed to have maintained fairly intact a force of 150,000 to 200,000 picked troops, and soldiers from Kwangsi Province, in the south-west, have given a good account of themselves in the war, probably because Kwangsi had one of the most efficient provincial systems of conscription and military training. (*See* also SINO-JAPANESE WAR.)

Finances and Banking. The unit of currency is the yuan, or dollar, which was worth 1*s.* 2·1*d.* at the end of 1937, but had fallen to 7·76*d.* by the end of 1938. The budget for 1937–38 was supposed to be balanced at 1,000,649,496 dollars, but the outbreak of the war unquestionably affected both income and appropriations. No subsequent budget has been published. According to the budget of 1937–38 the chief items of revenue were supposed to be customs receipts (36·9 per cent); the salt tax (22·85 per cent), and the consolidated tax, a levy on trade and industry (17·55 per cent). All these sources of revenue have been gravely impaired by the Japanese occupation of China's main ports and industrial centres, and of some of the chief salt-producing areas. The war has been financed largely by loans and by a policy of drastic retrenchment in government expenses, while munitions and supplies from abroad have been paid for largely with exports of silver and by drawing on reserves in foreign banks. The three largest and most important banks in China are the Central Bank of China, the Bank of China, and the Bank of Communications. There are also fourteen Japanese and nineteen other foreign banks which carry on business in China.

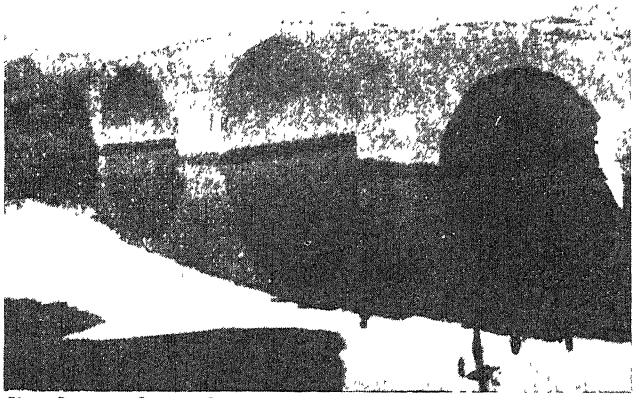


Keystone

FIRE BREAKS OUT IN A NORTHERN CHINESE TOWN AFTER BOMBING BY JAPANESE AIRCRAFT

Trade and Communications. China's imports amounted to 941,545,000 Chinese dollars and exports to 705,741,000 dollars in 1936. Exports were stimulated by the abandonment of the silver basis of the currency in 1935 and the depreciation of the Chinese dollar. China's exports during 1937 amounted to 838,255,705 Chinese dollars, imports were valued at 953,386,007 dollars. During the first ten months of 1938 exports were 636,009,325 dollars (732,756,914 dollars in the corresponding period of 1937), imports were 739,722,005 dollars (856,094,663 dollars in 1937). Japan's occupation of Canton in October closed up the most convenient remaining route between Nationalist China and the outside world and increased the difficulties of carrying on foreign trade. China's main exports are eggs and egg products, silk, cotton, wood-oil, ground-nuts, seeds of various kinds, tea, and various ores and metals, including wolfram and antimony. Its main imports are metals, machinery, chemicals, dyes and paints, petroleum, and tobacco.

China had between 6,000 and 7,000 miles of railways at the end of 1936 and a five-year plan for the construction of 5,300 additional miles after 1936. Highway construction, which had increased substantially during recent years, reached the figure of 56,000 miles in 1935. According to a report of the ministry of communications in 1931, China had 2,986 registered ships, with a tonnage of 431,892. China has no trans-oceanic shipping lines, and much of the coastal shipping is in the hands of British and Japanese firms. A total of 87,755 ocean vessels entered and cleared at Chinese ports in 1936. British ships represented 16,000,000 tons; Japanese 9,500,000, and Chinese 7,300,000. The government telephone system in 1935 served 21 cities and 62 others were served by private and provincial systems. About 250,000 telephones were in use. China has 53,000 miles of telegraph lines and several high-power radio installations.



China Campaign Committee]
A WOUNDED SOLDIER HEADING SOUTH FROM THE BATTLEFIELD NEAR JUICHANG IN THE SOUTH YANGTZE AREA



China Campaign Committee]
CHINESE SOLDIERS HELPING FARMERS TO GATHER RICE, LESS THAN TWO MILES FROM THE YANGTZE WESTERN FRONT

The war with Japan had a varied effect on China's economic development. It brought great misery to a large part of the population as a result of acts of devastation carried out by both sides. By the end of 1938, much the greater part of China's railway network was in the possession of the Japanese army. Japan had also taken over the communication systems in occupied territory. On the other hand, railway and road construction in the unoccupied south-west was stimulated. A new railway line was opened between Hengchow in South Hunan and Kweilin in Kiangsi, and two other lines (between Kweilin and Nanning, capital of Kwangsi, and between Nanning and Lungchow, on the border of French Indo-China) are under construction. Road communication in the remote interior also improved and a new motor road between Kunming, capital of Yunnan Province, and the Burma frontier was opened for traffic There has also been some industrial building in the interior, although this presents more difficulties than railway and road construction. In 1938 there was a marked industrial revival within the limits of the International Settlement of Shanghai. This was partly attributable to the flight of Chinese capital and labour from regions under Japanese occupation

The chief cities of China are linked up by air routes, which often serve as a substitute for non-existent rail connexions. Commercial aviation is in the hands of the Sino-American China National Aviation Corporation and the Sino-German Eurasia Aviation Corporation.

Agriculture, Manufactures, and Mining. China is an overwhelmingly agricultural country, and is predominantly a land of small-scale farming. As many as 36 per cent of its farms are less than 1½ acres in size, while 62 per cent are less than 4·3 acres. Rice is the main crop and the main food in the southern and central part of the country, while wheat, millet, kaoliang, and other grain crops are raised in the north. Animal husbandry is little practised, as there is little spare land for pasturing. China has fallen behind in the production of its traditional tea and silk because of lack of standardization and grading; efforts have been made recently to improve quality and increase output of tea, silk, and cotton.

Coal is China's most important mineral. The geological survey of China in 1934 estimated the country's coal reserves at 238,555,000,000 tons, of which more than half was in the mountainous north-western province of Shansi (now largely under Japanese occupation) and almost a third in the neighbouring Shensi. China's annual output of coal is about 20,000,000 tons. China leads the world in the production of antimony and tungsten. It is very poor in other important sources of mineral wealth, in petroleum, iron, copper, gold, and silver. Total deposits of iron are estimated at about 250,000,000 tons, of which about 90,000,000 tons are in Chahar province, while a considerable part of the remainder is to be found in Hupeh and Anhwei provinces, in the valley of the Yangtze. Iron-ore output is at the rate of about 2,000,000 tons a year. Manufacturing industry, in the modern sense of the term, is still in its infancy in China, and is largely concentrated in a few large centres, such as Shanghai, Tientsin, Canton, and Hankow. Cotton mills, silk filatures, flour mills, cigarette factories, cement works are among the most common types of industrial enterprises. The fighting in the Shanghai-Nanking area was a terrific blow to China's industrial development, since a great number of factories in the region were destroyed or badly damaged.

Japan has extensive plans for the reconstruction of industry in those parts of China which have passed under its military control. Two semi-governmental corporations, the North China Development Company, capitalized at 350,000,000 yen, and the Central China Development Company, capitalized at 100,000,000 yen, have been established for the exploitation of these two parts of China. No large enterprises have yet been undertaken, partly because of lack of capital, partly because of unsettled conditions off the railway lines. Japan hopes in time to obtain iron ore from the Lungyen fields (north-west of Peking) and the Tayeh deposits (near Hankow), cotton from several provinces of North China, and coal from Shansi A certain amount of industrial salt is already being obtained in the neighbourhood of Tientsin. The Japanese cotton mills which were destroyed by the Chinese before they abandoned Tsingtao are being slowly rebuilt. (W. H. Ch.)

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CHURCH OF CHRIST, SCIENTIST. For the Christian Science movement throughout the world, 1938 was a period

of steady progress This was the case, not only in the United States, but also in other countries Even in Germany, the growth of the movement has not been stopped by the tendency of National Socialism to become an exclusive interest, nor by German restrictions on church collections and on the importation of books and periodicals

The number of Christian Scientists in the United States continues to exceed the number in all other countries, but within the United States the conspicuous growth of the Christian Science movement has moved westward from New England to the Pacific Coast Of the United States, California now has the largest number of Christian Scientists

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The Christian Science denomination (Dec. 1, 1938) included 2,825 churches and societies, besides many Christian Scientists living where local congregations are not yet organized There were 2,167 churches and societies in the United States, 307 in Great Britain, eighty in Germany, and 271 in other countries, including those most distant from Boston (Australia, New Zealand, and South Africa) There were 65 Christian Science Organizations at colleges or universities, and 11,216 practitioners engaged exclusively in Christian Science practice.

CHURCH OF ENGLAND, THE. Apart from the international crisis, the 400th anniversary of the open Bible and the publication of the Doctrinal Report (*see* ARCHBISHOPS' COMMISSION (DOCTRINAL REPORT)), there were few individual events of really outstanding interest. The Church continued, largely through the activities of the archbishop of Canterbury, to exercise a vigorous influence on the public life of the country. It was a year of consolidation and quiet progress in Church affairs, though marred by the prospect of the addition of heavy financial losses under the Coal Bill to the capital loss of some £17,750,000 resulting from the Tithe Act of 1936, a situation to meet which every possible adjustment is being made by the Ecclesiastical Commissioners and Queen Anne's Bounty. Both of these institutions suffered a heavy blow by the sudden death of Sir George Middleton in October.

The Recall to Religion. The work of following up the Primate's Recall to Religion went steadily forward, and the bishop of Leicester, chairman of the Archbishops' Evangelistic Committee, was able to record in this connexion, in the pages of *The Official Year Book of the Church of England*, " much cause for quiet encouragement ". The number of Easter communicants in 1937 (published in 1938) was 2,225,880.

Church and Cathedral Building. It was a year of active church extension work in all the new housing areas both in the north and in the south—work which was facilitated by the Central Loan Fund operated by the Central Board of Finance, as well as by various diocesan appeals. The work of reorganizing the cathedrals went forward under the Cathedral Commissioners. Steady progress was also made with the building of the great cathedrals of Liverpool and Guildford, and with the extension of that of Portsmouth. An appeal for £25,000 was launched to place the upkeep of Southwark Cathedral on a satisfactory permanent footing, and in October the Princess Royal attended a ceremony in connexion with the extension of Blackburn Cathedral. There was further rapid progress in the building of the Church House, Westminster

The Church Assembly, the Convocations, the Church Congress. Among the measures passed by the Church Assembly were the Parsonage Measure, 1938 (Royal Assent, June 23 . the Ecclesiastical Commissioners (Powers) Measure, 1938 (Royal Assent, June 23); the Faculty Jurisdiction Measure, 1938, which makes faculty jurisdiction more effective and gives statutory recognition and functions to the Diocesan Advisory Committees (Royal Assent, July 13); the Queen Anne's Bounty (Powers) Measure, which gives the Bounty additional powers, especially as regards the application of augmentation moneys and the abatement and extinguishment of charges upon benefices (Final Approval, June 24); and the Premunire (Appointment of Bishops) Abolition Measure, the object of which is to abolish the penalties of Premunire in relation to the appointment of bishops (Final Approval, June 24). In February the Church Assembly approved of the proposed World Council of Churches (*see* ANGLICAN COMMUNION, THE), and in June it approved of the setting up of a Council on the Christian Faith and the Common Life, proposals for which had been initiated by the archbishop of Canterbury and representatives of the larger Churches in Great Britain: " (i) to help in rebuilding the bridges between the Christian understanding of life and the ordinary activities of men, by stimulating thinking and investigation, (ii) to provide means of consultation between the Churches and facilitate common action; and (iii) to co-operate with the World Council of Churches, if it is formed, in furthering all efforts to awaken among Christians a sense of the Church of Christ as a universal society, to which the evangelism of the world is committed by God ".

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The Church Congress, which is usually held triennially, met at Bristol from Oct. 4 to 7 under the presidency of the bishop of Bristol (the Right Rev. C. S. Woodward). The general subject was " The Gospel to this Generation ".

Four-fold Education Policy. At a meeting on Jan. 12 of the Consultative Committee of the National Society (the Central Council of the Church for Religious Education), the archbishop of Canterbury presiding, the following four-fold policy was outlined by Viscount Sankey, chairman of the Standing Committee of the National Society, and approved: (1) To continue the policy of supporting the Church schools system, building Church senior schools, and ensuring that in all Church elementary schools the buildings should be adequate according to modern standards. (2) To give increasing attention to Church of England children in council schools. (3) To promote closer co-operation between the National Society and the dioceses. (4) To bring all teachers in Church schools into closer co-operation with the deliberations of the National Society, through conferences and membership of committees.

Retirements Announced. In addition to the losses by death already recorded (*see* ANGLICAN COMMUNION, THE), announcement was made during the year of the forthcoming retirement of the bishops of London and Durham.

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The subjects before the Convocations of Canterbury and York included an important scheme for a declaration of the meaning of "lawful authority" in the Declaration of Assent, the Doctrinal Report, the appointment of bishops, and the status of deaconesses.

The Church Congress, which is usually held triennially, met at Bristol from Oct. 4 to 7 under the presidency of the bishop of Bristol (the Right Rev. C. S. Woodward). The general subject was "The Gospel to this Generation".

Four-fold Education Policy. At a meeting on Jan 12 of the Consultative Committee of the National Society (the Central Council of the Church for Religious Education), the archbishop of Canterbury presiding, the following four-fold policy was outlined by Viscount Sankey, chairman of the Standing Committee of the National Society, and approved: (1) To continue the policy of supporting the Church schools system, building Church senior schools, and ensuring that in all Church elementary schools the buildings should be adequate according to modern standards. (2) To give increasing attention to Church of England children in council schools. (3) To promote closer co-operation between the National Society and the dioceses. (4) To bring all teachers in Church schools into closer co-operation with the deliberations of the National Society, through conferences and membership of committees.

Retirements Announced. In addition to the losses by death already recorded (*see* ANGLICAN COMMUNION, THE), announcement was made during the year of the forthcoming retirement of the bishops of London and Durham.

Other Events. Missionary work is dealt with *s.v.* Anglican Communion, but reference must be made here to the appeal launched by the archbishop of Canterbury on behalf of Anglo-Indian schools, and to the publication in June by the Missionary Council of the Church Assembly, of *The Healing Church*, the sixth Unified Statement of the Work and Needs of the Church Overseas. Finally must be recorded the increasing interest of the Church in films throughout the year, the centenary of the Guards' Chapel in May; the Jubilee of the diocese of Wakefield, also in May, and last but far from least, the universal stirring of all hearts which filled Westminster Abbey and innumerable other churches during the crisis (R. S.)

CIGARS AND CIGARETTES. The year 1938 showed a still further increase in the amount of tobacco consumed in Great Britain. For the ten months' period ending Oct. 31, 1938, the quantity retained for home consumption amounted to 157,504,022 lb., which compares with 151,209,340 lb. in the same period of the previous year. The latest report of the Commissioners of Customs and Excise also shows that the duties collected on tobacco were £5,500,000 greater than the Chancellor's Budget estimate. In effect this means that the cigarette smoker who consumed 100 a week last year now smokes 106½. Actually the *per capita* consumption is 3·97 lb. against 3·71 lb. in 1937. Although this is the fourth highest among European countries, it is still far below the American average.

Cigar consumption in Great Britain continues to show a slight falling away. For the eleven months ending Nov. 1938, Cuba exported to the United Kingdom 16,385,760 cigars valued at $1,664,319, against 20,109,336 ($2,135,281) in the same period of 1937. Nor was this trend confined to Great Britain alone if the total Cuban figures be considered. Exports to all markets during the eleven months were 30,417,487 ($2,945,211) against 33,310,160 ($3,479,233) in 1937.

Much the same might be said with regard to America if the details issued by the Bureau of Internal Revenue are taken into account. These show that during the first nine months of 1938, tax was paid on 3,763,246,069 cigars; this compares with 3,971,024,593 in the same period of 1937. Cigarettes, however, showed an upward trend, the comparative figures being 124,232,519,066 and 123,336,525,174; in other words, there was an increase of 895,983,892. This movement is practically world-wide, and in support of this statement the latest details from two widely separated countries, the Netherlands and Mexico, might be adduced. Imports of cigarettes into the Netherlands from all sources during the first six months of 1938 totalled 210 million pieces, compared with 190 million pieces in the corresponding period of 1937. From Mexico, the Ministry of National Economy reports production valued at 52,051,121 pesos against 45,203,135 pesos in 1937. (D. L. H.)

CITY PLANNING: *see* TOWN AND COUNTRY PLANNING.

CIVIL LIST PENSIONS. Under the Civil List Act, 1937, the amount allowed to be granted in any one financial year to account of pensions, which for over 100 years have been awarded by the Crown to "persons who have merited the gracious consideration of their sovereign and the gratitude of their country", was raised from £1,200 to £2,500, and in the 1938 List the whole of this sum was allotted. The following pensioners received additions varying from £20 to £50 per ann.: Miss A. M. Buckton, Mrs. A. M. Carey, the Rev. H. W. Clark, D.D., Miss R. M. Fleming, Sir James Marchant, the widows of Stephen Phillips and G. R. Sims, M. P. Shiel, Miss B. Thorne, and Dudley Wright.

New pensions were awarded as follows:

£210 in trust for the three children (and during the minority of any one of them) of the archæologist, James Leslie Starkey, who was murdered by Arabs near Hebron on Jan. 10.

£160 to Rutland Boughton, the composer of *The Immortal Hour*.

£130 to Frank Elgee, archæologist and geologist.

£120 each to A. J. Finberg, art critic, and the widow of George Sheringham, artist and designer of stage scenery and costumes.

£110 each to James Reid Moir, F.R.S., archæologist, and the widow of H. A. Pegram, R.A.

£100 each to W. A. Bewes, authority on international law, John Glyn Davies and John Herbert Jones, for their services to Welsh literature, the daughter of the late John Drinkwater, poet and dramatist; Miss Alice Everett, M.A., in recognition of her own and her father's services to physics, etc., Professor J. J. Guest, formerly of Birmingham University, the promulgator of "Guest's Law" (*Ency. Brit.*, vol. 15, p. 58); Robert Machray, novelist and writer on foreign affairs, and the widow of Fred Pegram, R.I.

£75 each to the daughter of the late Dr. A. Dupré, F.R.S.; and to the widows of T. Leman Hare and F. H. Townsend, in recognition of their husbands' services to art, of J. Gwili Jenkins, Welsh author and theologian, of J. W. N. Sullivan, author and late reviewer for *The Times*, etc., and of Stephen Wheeler, the late authority on Landor.

CIVIL SERVICE. During the year ended April 1, 1938, the personnel of the British Civil Service continued to expand, and at its close (exclusive of industrial staffs and Ministry of Labour branch managers and local agents) totalled 376,491 (275,085 men and 101,406 women), an increase of 20,152. Every department, except the Ministry of Pensions (2·4 per cent decrease), was "up", the Post Office (*q.v.*), the largest employer, accounting for 60 per cent of the total and 49 per cent of the increase. Expansion and acceleration of shipbuilding and armament production and the growth of the Royal Air Force caused an addition of 3,325 to the staffs of the defence departments, which totalled 22,249; the Ministry of Labour staff increased by 1,769 to 26,934 through the expansion of the live register of unemployed persons, that of the Ministry of Agriculture and Fisheries by 1,021 to 4,588 through the coming into force of the Agriculture Act, 1937, and acceleration of the Ordnance Survey; and that of the Home Department by 428 to 12,390, mainly through A.R.P. The staff of the Inland Revenue was increased by 743 to a total of 24,342, and of Customs and Excise by 211 to 14,669; additional work resulting from the transfer of duties from local authorities (see *Ency. Brit. Book of the Year*, 1938, p. 524) on April 1, 1937, mainly accounts for the rise in the staff of the Unemployment Assistance Board from 7,643 to 8,105, increased work in connexion with voluntary contributory pensions (*Ency. Brit. Book of the Year*, 1938, pp. 441–42) brought the staff of the Ministry of Health from 6,454 to 6,771, while the staff of the Board of Trade expanded from 4,396 to 4,611 through the administration of the Coal Act, 1937, and expansion of the Mercantile Marine and Patents departments. Ex-servicemen in government departments totalled 172,841.

The movement for placing women on an equal footing with men as regards pay has not yet met with success, but

improvements in salary were secured during 1938 for several thousand clerks employed in the War Office and at Air Ministry outstations, the increase amounting in the former case to, at the maximum, approximately £80 and in the latter to approximately £35 per annum. In addition to these, the Civil Service Arbitration Tribunal awarded in October improved pay scales for the various grades of Post Office workers, the amounts varying from 5*s.* to 6*s* 6*d* per week.

Towards the end of the year steps were taken by the Civil Service Clerical Association, the Ministry of Labour Staff Association, the Inland Revenue Staff Federation, and the County Court Officers' Association to replace the Civil Service Confederation, a body embracing the executive, clerical, and minor and manipulative grades in the Service and representing it on the National Whitley Council, by a new organization, the Civil Service Alliance, with central executive control of policy. The four associations mentioned comprised 80 per cent of the membership of the confederation, the balance consisting mainly of small groups (L. H D)

United States. The progress of the merit system in the Federal government proceeded during 1938 on two lines. Congress, after a long delay, enacted legislation placing over 14,000 first-, second-, and third-class postmasters under the merit system. This victory is greater than might be suggested by the numbers involved, since local postmasters have traditionally been an important cog in the political machines of both parties, and a convenient contact between congressmen, their constituents, and the postal employees. An executive order of President Roosevelt on June 24, 1938, extended the merit system to all positions not affirmatively excepted by legislation, an estimated total of about 100,000. This order, effective from Feb. 1939, will expand the Federal classified service to about 650,000. Meanwhile, the extension of the merit system to all remaining Federal positions except those policy-forming in nature was barely defeated in the House after favourable action in the Senate on the so-called Reorganization Bill. This bill will be given renewed attention in 1939.

The principal debate during 1938 concerned the proposal to replace the United States Civil Service Commission by an Administrator. Both the Senate and the House of Representatives approved the proposal, which was a part of the Reorganization Bill, but it was defeated on final roll-call in the House, partly as a result of a misdirected campaign of opposition to a " dictator " bill.

CLASSICAL STUDIES. While archæological research continues to widen our knowledge of ancient civilization on the material side, we owe a still greater debt to archæology for the mass of literary material unearthed from the tombs and rubbish-heaps of Hellenistic Egypt. Among *papyri* recently discovered or published, there are some fragments of great interest, though not of great bulk, comprising as they do portions of lost works of Aeschylus, Sophocles, and Euripides.

Modern editors of classical texts are hampered by accumulated masses of emendation which have found their way into our editions : a good example of conservative work in textual reconstruction is Gilbert Murray's *Aeschylus*, lately produced by the Oxford University Press, while Sir David Ross has done fine work both for the text and the interpretation of Aristotle's *Physics*.

The ever-increasing demand for editions with a translation on the opposite page to the original is gradually being met by the *Loeb Library* and the *Belles Lettres* series. These works, in which many well-known English, American, and French scholars have collaborated, are of value, not only to the general reader, but to the specialist, for they all contain scholarly texts of the authors, some of whom have hitherto been accessible, if at all, only in antiquated editions. We may instance Athenæus, Philo, the Roman tragedians, and the Greek novelists.

Apart from literature pure and simple, the general interpretation of ancient life and thought is an important branch of study. The Homeric question is never finally answered, and much has been written of late years on the structure of the poems. The late Milman Parry regarded epic technique as a mechanical process, whereby a series of lays forming the *Iliad* and *Odyssey* was improvised out of a rich store of stock-phrases ; others, such as J. T. Sheppard, and more recently J. L. Myres, believe that all the details were carefully arranged according to a preconceived plan. Martin Nillson's *Homer and Mycenæ* contains an admirable review of the situation and other valuable contributions to Homeric study. J. W. H. Atkins's *Literary Criticism in Ancient Times* traces a continuous current of thought through Greek and Roman writers ; G. C. Richards's *Cicero* gives a clear picture of the orator's life and works ; E. E. Sikes's *Introduction to Lucretius* is a valuable guide to students. Horace, whose bi-millennium produced a great crop of literature, has an aftermath in E. K. Rand's lectures on *Horace and the Spirit of Comedy*. (J. F. D.)

CLEVELAND, a city of North-east Ohio, occupies 73·74 sq. miles. On July 1, 1937, the population was estimated at 924,400.

Reorganization of the city's police department was an outstanding accomplishment of the administration of Mayor Harold H. Burton in 1938. The city's traffic fatalities in 1938 were almost 50 per cent less than the 1937 total, while traffic injuries were reduced by about one-third. The General Assembly's refusal to place relief on a permanent basis led to sit-down strikes in January and May. The Lake Shore Electric railway, one of the country's few remaining electric inter-urban lines, suspended operations on May 15, and on July 17 all passenger service on the Wheeling and Lake Erie railroad was suspended. At a special election on Dec. 21, voters approved a $3 millions mortgage bond issue to expand the municipal electric-light plant. Work was begun in May on the Main avenue high level bridge across the Cuyahoga River, which, with its approaches, will cost $7,200,000 ; and in October on a project to straighten and improve the channel of the Cuyahoga River to make it navigable by the largest lake freighters.

CLINICS : *see* PUBLIC HEALTH SERVICE.

CLOTHING INDUSTRY. Following the difficult period experienced by the clothing industry in 1937, due to rising wool prices, increased wage bills, and the economic strains of the National Defence Contribution, many looked to 1938 with optimism. But the weather proved contrary, and as rumours and counter-rumours of war gained firmer hold, business became increasingly unsettled, unemployment rose, and many branches of the industry continued to decline. The manufacturers of the cheapest grades of clothing appear to have suffered most, those concerned in the highest-priced products least : midway between came the big multiple firms, doing business that was mediocre.

The average monthly proportion of unemployed in the tailoring industry, during the first eleven months of the year, amounted to approximately 7¾ per cent of the total number of insured persons aged 16–64 ; a considerable rise

from the 6½ per cent average during the corresponding period of 1937. British trade abroad, too, provided a sharp reflection of world affairs For example, the total exports of suits and overcoats from the United Kingdom showed a decrease of approximately 21 per cent in value in 1937; while corresponding imports dropped 31½ per cent Perhaps the sole consolation of the slump was that it enabled the industry, while, so to speak, marking time, to consolidate the progress continually being made in methods of production. The main trend is still in favour of increased specialization in details and intermediate processes: more and more manufacturers are concentrating on producing one article in its highest state of efficiency such as the production by one large firm of ready-padded undercollars and ready-built-up interlinings: altogether a welcome trend, since it leads to reduction in labour costs, saving in material, and simplification of stocking and matching. A further contributory factor of this "specialization" to the present-day speeding-up of production is that, by simplifying the routine in individual firms, it releases skilled labour and machines for other work.

From the public point of view, another noticeable trend was the constantly increasing demand, even in the cheaper lines, for made-to-measure clothes as opposed to ready-mades. The taste and discrimination of the man-in-the-street can definitely be said to be improving in this respect: in a word, he is becoming more "clothes-conscious". Worsteds held their own as the most popular material, with blue in various shades and designs as the predominant colour. There was a gradual decline in popularity of "sports" jackets and flannels in favour of the new, neat, two-piece type of suit cut comfortably in an informal cloth. Experts are predicting that this new two-piece suit will be the popular summer style of 1939. (H. P. P.)

In the United States, the clothing industry also suffered severe financial reverses. Sales, and consequently production, fell off considerably. Increased production costs continued with renewed search for effort-saving devices the keynote. Great debate was held concerning the virtues and vices of the straight-line system as compared with the so-called bundle system. Generally, it was said that each system has its proper sphere; the straight-line where low cost is essential, where a variety of garments are not made and where labour is easily replaced. New machines appeared on the market: cloth-laying devices, cutting machines, blind stitch machines, pressing machines, and new, fast sewing machines. The slide fastener was taken up generally, on the wings of great consumer and manufacturer advertising. This was especially true of trousers and jackets; indications are for a renewed drive for slide fasteners on full-length coats.

Great demand for loose-fitting garments was the outstanding feature of the year. Bush coats and shirts were in demand. Sport shirts again were leaders. Indications of a trend toward peg-top trousers were evident with regular slacks still topping the field. Combination slacks and sport shirts of the same material were good sellers. In and out shirts and no-collar coats have made their presence felt. Interesting is the fact that the ensemble vogue has made trouser manufacturers out of shirt manufacturers, and vice versa, and at the same time driven the regular wear manufacturer to desperate straits.

Late in the year increased government regulation of the industry appeared in the hours and wages law and the new label rules for the woollen industry. Divided opinion greeted these measures as well as the Anglo-American trade treaty which lowered wool import duties. Political troubles abroad made themselves felt

The 1937 figure for all garments cut in the men's, young men's, and boys' industries (based on 72 per cent of value) was 281,365,267. It is indicated that 1938 will show a twenty per cent loss from these figures. (X.)

Ladies' Clothing. Sewing machines can now be found in almost all the remote villages and towns everywhere. In every country people make a large amount of their own clothing, but mass production tends to become more and more centralized.

For original model garments, Paris and London are the important centres; for bulk production, London, New York, and Berlin. Leeds and Manchester are increasingly important in the production of ladies' outer wear in the British Isles, and the quality of work and materials is very high.

Efforts are being made to overcome the difficulty of stock sizes, and one large firm in Leeds produces as many as 55 different sizes. A closer study of sizes and a large and comprehensive range of different fittings are regarded by the trade as necessary to supply the public from stock without expensive alterations. The New York dress section of the trade has tackled the size question very well, but the same range of sizes is difficult to adapt to the requirements of the trade of other countries such as Great Britain.

The large variety of styles and materials required to meet the demands of changing fashion make the mass production of ladies' outer wear a most difficult matter. In certain sections of the trade, which is gradually becoming more mechanized, ingenious machines are continually being invented and adapted. An outstanding instance is a new quilting machine used to make a type of embroidery now very popular on ladies' coats (*see* FASHION). (G. H. W.)

COAL INDUSTRY. The estimated output of coal in Great Britain for 1938, namely 229 million tons, is 11 millions less than 1937. The decrease is due to a poorer demand for export and bunkers.

TABLE I

Year	Output, 000 Tons	Annual Change, 000 Tons
1929	258,000	—
1933	207,000	— 2,000
1936	228,000	+ 6,000
1937	240,000	+ 12,000
1938	229,000	— 11,000

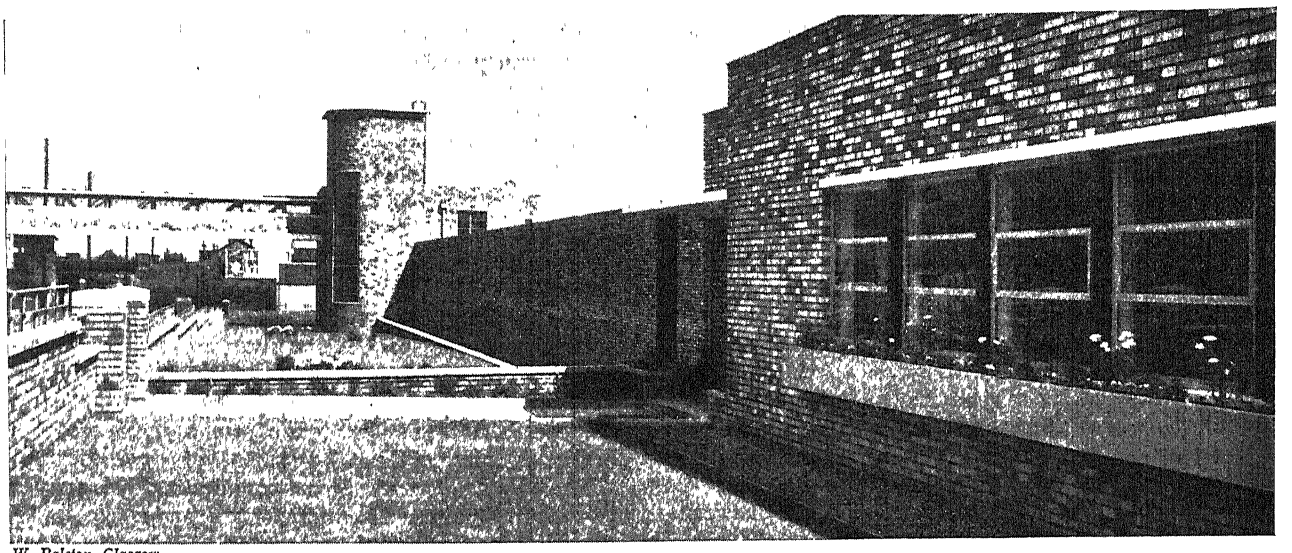
In considering the above table, it must be remembered that the art of coal utilization has made great strides in the past decade, and that the use of fuel oil has increased greatly.

At a modern super-power station like Battersea the coal consumption is only 1·05 lb. of coal per electrical h.p. sent out, whereas in 1918 the figure would have been nearer 5 lb.

The increase of road transport has adversely affected the railways, who are also large consumers of coal.

Number Employed. The number of persons employed has shown a steady decline during the year, a decline that is comparable with the reduction in the demand for coal. The seasonal demand for house coal has not affected the number of employees as much as usual, owing to the autumn and early winter months being so mild.

The output per person employed has increased slightly in recent years, being between 23 and 24 cwt. per man shift. Any increase in the use of machinery has been offset by the



W. Ralston, Glasgow

NEWCRAIGHALL PITHEAD BATHS, LOTHIAN, OPENED MAY 17, 1938

TABLE II

Production by Districts

	1929, 000 Tons	1933, 000 Tons	1937, 000 Tons	1938, 000 Tons
Northumberland	15,000	13,000	15,000	13,000
Durham	39,000	28,000	32,000	30,900
Yorkshire	46,000	37,000	44,000	42,000
Lancs, Cheshire, and North Wales	19,000	16,000	18,000	16,600
Derby, Notts, and Leicester	33,000	28,000	33,000	31,500
Staffs, Salop, Worcester, and Warwick	18,000	17,000	21,000	21,000
South Wales and Monmouth	48,000	34,000	36,000	35,000
Other English Districts	6,000	5,000	7,000	6,000
Scotland	34,000	20,000	34,000	32,000
Total	258,000	207,000	240,000	228,000

necessity for working thinner or more difficult seams. It must be remembered that the potential output of the coalfields is nearly half as much again as their actual output. This leads to short time being worked in all mines, and this is not conducive to efficiency.

TABLE III

Men at Work

End of	1937	1938
March	766,000	792,000
June†	778,000	786,000
September	780,000	773,000
December	780,000	770,000

Utilization of Output. The expansion of the heavy industries which became apparent in 1937 has been well maintained during 1938, and this is reflected in the continued good demand for home consumption.

There has been, however, a definite decline in the export trade, particularly to France, Belgium, and the Scandinavian countries, which is due to the continued decline in demand in these markets, accompanied by a fall in imports from all sources. In addition there has been an increase of restrictions on imports with France and Belgium as compared with the previous year. In the case of Italy, the demand was strong in the earlier months of the year, but declined later as it became necessary for Italy to maintain an equation between the value of coal imported and the sterling resources available.

No important new trade agreements were negotiated during the year, though amendments were made in one or two cases.

The question of a small levy on coal consumed at home in order to effect a subsidy on export coal has been under consideration, but no official steps have been taken to put it into effect. The threat of increasing competition from Germany and Poland has not caused any serious trouble during the year.

TABLE IV

Utilization of Output

	1913, 000 Tons	1933, 000 Tons	1937, 000 Tons	1938, 000 Tons
Home consumption	183,000	148,000	184,000	181,000
Exports (including coke)	75,000	42,000	42,000	37,000
Foreign bunkers	21,000	13,000	14,000	11,000

TABLE V

Destination of Exports

(Coal only)

Europe and Mediterranean	1929, 000 Tons	1933, 000 Tons	1937, 000 Tons	1938, 000 Tons
Baltic States	3,712	1,063	1,914	1,900
Scandinavia (Sweden, Norway, and Denmark)	5,974	5,824	8,504	7,090
Germany	5,521	2,360	3,256	3,250
France, Belgium, and Holland	20,308	11,714	10,479	8,410
Italy	7,095	4,793	2,246	2,210
Spain and Portugal	2,833	2,069	1,637	1,730
Malta, Gibraltar, and Channel Islands	742	569	755	737
Irish Free State	2,456	1,255	2,506	2,560
Egypt and Other Countries	5,733	3,223	1,957	3,170
Africa and Asia	1,706	679	1,237	560
Northern and Central America	1,172	2,506	1,700	1,410
South America	5,271	2,876	3,237	2,720
Other Destinations	740	137	572	130
Total	60,263	39,068	40,000	35,877

Cost of Production and Profit per Ton. The average declared value per ton of coal sold during the year has risen from 15*s.* 11½*d.* to 17*s.* 3*d.*, and this rise is reflected in both the home and export market.

No major wage agreement has been negotiated during the year except one in the Lancashire and Cheshire district, which is to operate for one year from July 1, 1938. In many districts wages above the minimum rate have been paid during the year.

The average cash earnings per shift of all classes are estimated at 11*s.* 3*d.*, or sixpence more than in the preceding year, and during the year holidays-with-pay agreements have been concluded in most districts

There has been a continued rise in the price of colliery stores, particularly in pitwood and steel. The national armament programme has definitely increased the cost of production of coal in Great Britain.

The district selling schemes have continued to operate during the year with reasonable satisfaction, but no public action has yet been taken to co-ordinate the various districts; as a result coalfields close to the sea-coast have an advantage in the coastal trade over the inland districts.

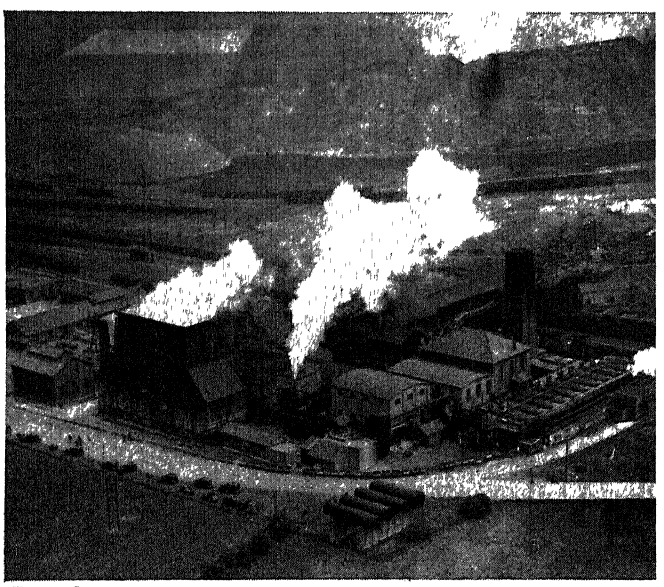
TABLE VI

Cost of Production and Proceeds per Ton of Coal Disposed of Commercially

	1937	1938
	s *d*	*s* *d.*
Wages	9 11	10 8
Stores and Timber	1 9	2 3
Other costs	2 6	2 8
Miners' Welfare Fund	0 0·5	0 0·5
Royalties	0 5·5	0 5·7
	14 8	16 1·2
Deduct Proceeds of Miners' Coal	0 1	0 1
Net Costs	14 7	16 0·2
Net Proceeds	15 8	17 3
Net costs	14 7	16 0
Credit Balance	1 1	1 3

Accidents. During the year the fatal accident rate has not altered materially from recent years, the death-rate being approximately 1 per 1,000 men employed, including underground and surface.

The accident rate per 100,000 man shifts worked above and below ground was 0·39 in 1936 and 0·43 in 1937.



Keystone]

MARKHAM COLLIERY, DERBYSHIRE, WHERE AN EXPLOSION ON MAY 10, 1938, KILLED 79 MEN

There has been one serious mining disaster during the year, namely the explosion at Markham Colliery, Derbyshire, which resulted in the loss of 79 lives. In addition, nine deaths were caused by an underground fire at Dumbreck Colliery, Stirling.

Safety in Coal Mines. Extensive use is being made of protective equipment in mines, at least 500,000 hard hats being in daily use. In addition to hard hats, special gloves, boots and shin protectors are being used in increasing quantities.

The condition of the haulage roads is being improved steadily, and over 3,000 miles of roadway, or 25 per cent of the whole, are protected by steel arches, while over 500,000 steel props are in use underground It has been estimated that more than 240 million tons of steel supports are in use in the coal mines of Great Britain.

The training of youths in matters affecting their safety is being actively pursued in most districts, and is expected to show positive results in the near future. It is a melancholy fact that many accidents underground are due to the workman's own carelessness or negligence.

General. There has been an increase in the number of pit-head baths erected during the year, and at the end of the year there were 131 in the process of erection or likely to be built shortly. These would provide extra accommodation for 140,000 men and 350 women. There are already in use 255 baths accommodating 330,700 persons. The cost is met largely by grants from the Miners' Welfare Fund, derived from a compulsory levy of ½*d.* per ton on all coal produced. Though the value of the pit-head bath was not realized by the mining population until recently, there is no doubt on the matter to-day.

One of the principal events of the year has been the publication of the report of the committee presided over by Lord Falmouth on Feb. 15, 1938, which examined among other things the question of the economic production of oil from coal.

The most important piece of legislation was the passing of the Coal Bill, which received the royal assent on July 29, 1938. The purpose of this bill is to provide for the unification of the coal royalties under public ownership.

Coke and Oil. During the year twenty million tons of coal were carbonized in 6,000 by-product ovens, the majority of which were of the regenerative type. During the same period nineteen million tons of coal were used in gas works. Some of the surplus gas from the by-product coke ovens, especially in the north of England, is sold direct to retail gas undertakings.

There has been a steady increase in the quantity of both light and heavy oils produced, the amounts in each case exceeding 100 million gallons. No success has, as yet, attended the attempts to find commercial quantities of natural oil in Great Britain. (J. A. S. R.)

United States. In the United States bituminous coal production has not yet recovered from the heavy decline which dropped the production rate by nearly one-half early in 1937; a gradual recovery in progress until near the end of the year was broken by the usual year-end decline. The high rate early in the year and the partial recovery resulted in a total output slightly greater (0·8 per cent) than that of 1936, at 442,455,000 short tons. Anthracite did not fare quite so well, and came out five per cent below 1936, at 51,856,000 tons. This gave a grand total of 494,311,000 tons, only 0·1 per cent above 1936. In 1938, the recovery from the year-end decline was broken at the end of January and production dropped regularly

until the end of March; throughout the entire second quarter production was at the low rate of about 2,500,000 tons weekly (bituminous only), gradually increasing during the third quarter, and averaging more than 4,000,000 tons weekly during the fourth quarter, up to the year-end decline Production for 1938 is reported at 342,407,000 tons, a drop of 23 per cent from 1937. The weekly production chart for anthracite during 1938 has much the appearance of a badly misused saw—a continuous series of ups and downs, with a tendency to sag in the middle, on the whole there were more downs than ups in the curve, for although the production rate at the end of the year was about the same as at the beginning, production for the year is reported at 45,054,000 tons, a drop of thirteen per cent from 1937. Total coal production for 1938 was then approximately 387,461,000 tons, or 22 per cent less than in 1937.

United States Production of Coal

(Millions of Short Tons)

	1929	1932	1935	1936	1937
Alabama	17·9	7 9	8 5	12·2	12 4
Colorado	9·9	5·6	5·9	6·8	7·2
Illinois	60·7	33·5	44 5	50 9	51 2
Indiana	18 3	13·3	15·8	17·8	17 3
Kentucky	60·5	35·3	40·8	47·5	47·1
Ohio	23·7	13·9	21 2	24·1	27·5
Pennsylvania	143·5	74·8	91·4	109·9	110 2
Tennessee	5·4	3·5	4·1	5·1	5 3
Utah	5·1	2·9	2·9	3·2	3·8
Virginia	12·7	7·7	9·7	11·7	13·6
West Virginia	138·5	85·6	99·2	117·9	118 1
Wyoming	6·7	4 2	5 2	5 8	5·9
Others	32·1	21·5	23·2	26·2	25·9
Total Bituminous	535·0	309·7	372·4	439·1	442·5
Anthracite	73·8	49·9	52·2	54·6	51 9
Grand Total	608·8	359·6	424·5	493·7	494·3

Considering coal as a whole, Pennsylvania is the foremost producing State, but eliminating anthracite and comparing only on a bituminous basis, Pennsylvania has lost the leading position, and West Virginia has taken its place. These two States alone produce more than half of the total bituminous output of the United States. Distributed by fields, about seventy per cent of the bituminous output comes from the Appalachian region (Pennsylvania, Ohio, West Virginia, Virginia, Eastern Kentucky, and Tennessee), twenty per cent from the Central region (Indiana, Illinois, Iowa, Missouri, and Kansas), six per cent from the Rocky Mountain and Western States, and three per cent from the Southern field (Alabama).

Although there is some international trade in coal, the amounts are so small that practically the United States industry is self-contained; imports are usually under 1,000,000 tons and exports have ranged from a high record of 24,000,000 tons in 1929 to a low record of 10,000,000 tons in 1932, including bunker coal and the coal equivalent of coke exported. (G. A. Ro.)

COAL: WORLD PRODUCTION. The reserves of coal, *i.e.* coal that can be worked at a profit, known in the world are approximately as under:

Anthracite	500,000 million tons
Bituminous	4,000,000 „ „
Lignite	8,000,000 „ „

In the larger coal-producing countries, the coal seams are mostly of carboniferous age, but vast quantities of lower-grade coal, such as lignite and brown coal, are available in Germany, Russia, Central Europe, and Asia.

The superficial extent of the coal areas of the world has been estimated at 605,000 square miles, or in the ratio of 1 to 110 of the land surface of the globe, about one-third belonging to formations newer than carboniferous. Coal is found in all latitudes between Spitzbergen and the Antarctic continent, and is of better quality as a whole in the Old World than in the New, also coal of the northern hemisphere is superior to that of the southern.[1]

Changes during 1938. During 1938 a redistribution of the coalfields has taken place in Central Europe owing to the absorption by the Reich of Austria and portions of Czechoslovakia The Austrian output of three million tons and the fourteen million tons of brown coal from the Falkenau and Elboger districts in Czechoslovakia are now controlled by Germany, while Poland has regained the Teschen area with an output of seven and a half million tons per annum As Austria has always had to import about three million tons of coal and coke, this redistribution of ownership will not materially affect the Continental situation, except to the extent that the output of the Teschen coalfield is not covered by the Anglo-Polish Trade Agreement at present in force.

The Anglo-German payment scheme, now covering the Austrian absorption, was renewed in July, a loan scheme to develop the Turkish minerals was completed during the year, and the possibility of an economic war in the Balkans is foreshadowed.

Principal Coalfields of the World. The United States is the largest producer of anthracite and bituminous coal in the world. Although the U.S.A. contains a larger amount of high-rank coal than any other country, its reserves of anthracite are relatively small. Bituminous coal is worked east of the Mississippi river, and low-grade lignites in the northern Great Plains and Gulf provinces, while comparatively little coal is found on the Pacific coast. The U.S.A. produces annually between 400 and 450 million tons, of which only some 11 million tons are exported, the majority going to Canada. The coalfields are all situated at a considerable distance from the shipping ports.

Germany. Germany, whose known coal reserves are the largest in Europe, is the world's second largest producer of coal, including lignite, and the largest producer of lignite itself. The bituminous coal districts of Germany are mainly in the Rhine provinces; the Saar district is close to the iron-ore deposits of Germany and France, the Rhine districts are in the heart of industrial Germany, while the output of Upper Silesia, the second most important field, is used both internally and for export. Lignite, which is extensively mined in Central Prussia, is dried before use and a large portion briqueted.

The German output is of the order of 350 million tons per annum, half of which is lignite, and 20 to 25 million tons is exported to France and other European continental countries.

The United Kingdom. The United Kingdom is the second largest producer of coal in Europe, and the largest exporter in the world. The coal is all of the highest quality, and the British anthracite, gas, and coking coals comprise the finest examples of their type in the world. The coalfields are distributed throughout the kingdom and in many cases are situated in close proximity to the shipping ports, which greatly assists the export trade.

The annual output of coal in Great Britain is some 230 million tons, of which forty million tons are exported, mostly

[1] Walcot Gibson: *Coal in Great Britain.*

to the continent of Europe and South America (*see* COAL INDUSTRY, Table V).

U.S.S.R. (*Russia*) The production of coal in the U.S.S.R. has shown an increase unparalleled among the world's larger coal producers. The largest producing coalfield is the Donetz basin, which is well equipped with railroads and is readily accessible to the Black Sea, and provides about 75 per cent of the coal mined in the U.S.S.R. An extensive lignite deposit is being developed south and west of Moscow to supply the industrial needs of that centre. One of the largest coal deposits in the world is situated in Central Siberia, the Kuznetsk basin, but it has not yet been developed to any great extent.

France. France, though a large producer, is short of coal and is therefore also a large importer. The most important coalfield is that of the Pas de Calais, centred round Valenciennes, Mons, and Lens. This coalfield was destroyed by the Germans in 1918, and as part of the reparation payment, the mines were re-equipped and are now modernized.

Poland. The main Polish coalfield borders on Silesia, and was ceded to Poland at the end of the War. The field has been extensively worked and by reason of the Polish Corridor and State-subsidized railways Polish coal has become a serious competitor to the older coal-exporting countries, especially in countries bordering on the Baltic Sea and in the Mediterranean.

Japan. Japan is a large consumer of coal, but is none too well provided with commercial deposits. There are, however, large deposits in Manchuria, especially at Fushun.

China. China possesses many coalfields, in fact one at least in every province, but as yet they have not been properly exploited.

South Africa. There are extensive coalfields in Natal, the Transvaal, and Southern Rhodesia. The Transvaal fields are in close proximity to the Witwatersrand goldfield. The Southern Rhodesian coalfield at Wankie has co-operated very materially in developing the copper-fields of Northern Rhodesia.

Australia. The more important coalfield in Australia is in New South Wales, and centres round Newcastle. A large lignite deposit is being worked in Victoria.

Coal Production of the World

(Including Lignite and Brown Coal)

Million Tons

	1929	1937	1938
United Kingdom	258·00	240·00	229·00
Germany	342·00	360·00	360·00
U.S.S.R.	40·30	121·00	125·00
France	55·00	43·00	42·00
Poland	46·00	35·00	33·00
Belgium	30·00	29·21	29·00
Netherlands	11·76	14·10	14·00
Czechoslovakia	39·00	34·92	27·00
U.S.A.	542·00	487·00	450·00
Canada	15·90	13·60	12·50
Australia	13·00	15·00	14·00
British Indies	24·00	22·21	22·00
Union of South Africa	13·10	15·25	16·00
Japan	34·00	45·00	45·00
China	15·00	14·00	?

Conclusion. It will be gathered from this short review that supplies of coal are available over a wide area of the earth's surface, but it will also be noted that the most progressive countries to-day are those possessing ample resources of coal which are being exploited. (J.A.S.R.)

COCHIN-CHINA: *see* FRENCH INDO-CHINA

COCOA. The Gold Coast farmers' "hold-up" of cocoa supplies lasting until April was the outstanding feature of 1938. An official report found the buying agreements, which provoked the hold-up, undesirable but improved marketing necessary.

Shipments from producing countries in 1938 totalled more than in 1937. The Gold Coast, Brazil, and St Domingo showed the chief increases and Nigeria the biggest decline. Trinidad exports increased, but French colonial shipments were almost unchanged. Imports declined heavily in 1938 for the United States, but increased for the chief European countries, notably the United Kingdom and the Netherlands. Visible stocks were reduced over the year in the United States, but increased substantially in the United Kingdom.

In Jan. 1938 the London price of good fermented Accra c.i.f. stood around 26*s.* a cwt., about half the price twelve months earlier. Some improvement occurred up to March, but the price dropped to 17*s.* 6*d.* at the end of May. A recovery thereafter was not fully maintained, and at the end of 1938 the price was about 21*s.* Movements for "fine cocoas" were similar.

The main crop estimates for 1938–39 indicate increases of about 10 per cent above 1937–38 for Brazil, 28,000 tons above the previous harvest for the Gold Coast, and little change in Nigeria. (J. L. C.)

COCONUTS: *see* VEGETABLE OILS AND ANIMAL FATS.

COFFEE. The quantity of coffee destroyed in Brazil from 1931 to Oct. 31, 1938, in the Brazilian government's coffee-marketing activities, was 84,444,000 centals. Of this 2,934,000 centals were destroyed in the first four months of the current 1938–39 season (July 1 to Oct. 31). Brazil's exportable coffee surplus for 1938–39 was reported by the International Institute of Agriculture as 31,315,000 centals, compared to 33,681,000 centals in 1937–38. The Colombian crop for 1938–39 was unofficially estimated at 4,250,000 bags of 60 kilos each. Coffee exports for the year ending June 30, 1938, are reported by the International Institute of Agriculture as follows, for principal producing countries: Brazil 1,934,056,000 lb.; Colombia 543,847,000 lb.; Netherlands Indies (Java and Madura) 190,046,000 lb.; Madagascar 70,817,000 lb.; Costa Rica 55,982,000 lb. and Haiti 50,341,000 lb. Compared with these figures the exports of the British Empire coffee-producing countries must seem but small: thus coffee exported from Kenya amounted to 26,883,000 lb.; India 16,405,000 lb.; Jamaica 8,375,000 lb.



Binks, Nairobi]

CUTTINGS SHOWING FLOWERS AND BERRIES OF A FOUR-YEAR-OLD COFFEE PLANT

and Aden 7,088,000 lb. Brazil had modified her export policy at the end of 1937, in view of the failure to arrive at an agreement for an international quota system. She had adopted the policy of competition, and reduction of the export tax and abolition of the official exchange quota had the effect of reducing her export price by 25 per cent. In the six months, January–June, 1938, shipments from Brazil increased by exactly this percentage, whereas those from other countries declined by nine per cent.

The principal coffee-importing countries, and the amount of their imports for the year ending June 30, 1938, were: United States 1,733,882,000 lb.; France 418,024,000 lb., Germany 400,425,000 lb., Belgium-Luxembourg 117,372,000 lb.; the Netherlands 101,631,000 lb., Sweden 105,716,000 lb.; Italy 76,516,000 lb., Denmark 61,551,000 lb., Finland 51,050,000 lb.; United Kingdom 50,795,000 lb. and Canada 41,050,000 lb. These figures once more reveal the extraordinarily low consumption of coffee per head in the United Kingdom, amounting as it does to less than one-twentieth of that in the Scandinavian countries. The year's end saw coffee shortages in both the totalitarian states. In Italy shopkeepers rationed their customers to ¼ lb. each, and the famine was even more acute in Germany. Germany's shortage was due to temporary difficulties over the barter agreement with Brazil, Italy's partly to the disorganization of trade caused by the government's creation of a monopoly company to handle coffee imports. (*See* also BRAZIL.)

COKE. The production of coke centres in the more heavily industrialized countries, particularly those with a large pig-iron output. World production, including both oven coke and gas-house coke, increased about eleven per cent in 1937, to an estimated 191,000,000 metric tons, the approximate distribution being: United States, 28 per cent; Germany, 25 per cent; United Kingdom, 15 per cent; U.S.S.R., 11 per cent; France, 5 per cent; Belgium, 3 per cent; Japanese Empire, 2 per cent; Netherlands, 2 per cent; Czechoslovakia, 2 per cent; India, Canada, Poland, and Italy, 5 per cent. Of the increased tonnage in 1937, the United States and Germany each contributed about 30 per cent and the United Kingdom 10 per cent.

The United States produced 52,362,000 short tons of oven coke in 1937, of which 94 per cent was by-product and six per cent beehive; this is an increase of thirteen per cent over 1936. Of the total, 65 per cent was used in the production of pig-iron and ferro-alloys. Production dropped heavily during 1938, the output for the first three-quarters being only 54 per cent of that for the corresponding period in 1937. Foreign trade plays a very little part in the industry, exports and imports each being of the order of one per cent of the output. Coke production took seventeen per cent of the bituminous coal production of the United States in 1937, apart from that used in gas works. Germany is the next largest producer of coke; in 1937 oven coke increased fourteen per cent to 14,894,000 metric tons; in addition, gas works coke is approximately 5,000,000 tons, and brown-coal coke 2,000,000 tons. Germany is a heavy exporter of coke, net exports in 1937 taking 20 per cent of the output.

Coke production increased six per cent in the United Kingdom in 1937, to 29,045,000 long tons; gas-house coke making up 45 per cent of the total, while by-product coke is 54 per cent, leaving one per cent for beehive ovens. Coke production consumed thirteen per cent of the bituminous coal output in 1937. Coke exports were 2,450,000 tons, or eight per cent of the total output. In Canada, in 1937 coke production used 3,577,000 short tons of coal, two-thirds of which was imported, in the making of 2,569,000 tons of coke; forty per cent of the output was used as domestic fuel, 35 per cent in smelting plants, and nine per cent in gas plants. In India, about 1,000,000 long tons of "soft coke" is made at the collieries, while "hard coke" production in 1937 was 1,867,000 long tons. The only other British Empire production of any magnitude is an output of about 1,500,000 tons in Australia, of which about sixty per cent is oven coke and forty per cent gas coke.

COLOMBIA, a republic in northern South America bordering both the Pacific and the Caribbean; language Spanish; capital, Bogotá; president, Eduardo Santos. Area 440,846 sq. m. Population (census 1928) 7,851,000 (official est. 1938), 8,698,634, the third largest in South America. A new census was taken in 1938, but is not yet released. Leading cities (1928 census): Bogotá, 235,421; Barranquilla, 139,974; Cali, 122,847; Medellín, 120,044; Cartagena, 92,491. Most of the population resides on the plateau; 30 per cent is urban.

Under constitutional amendment of May 25, 1938, the Congress meets once a year, instead of twice as formerly. The dominant political event of 1938 was the election (May 1), without formal opposition, of the Liberal candidate, Dr. Eduarto Santos, a leading newspaper editor of Bogotá and long a prominent figure in Colombian political life, to succeed President Alfonso López, who was constitutionally ineligible to succeed himself. The new president was inaugurated, Aug. 7, for a four-year term. Though somewhat less to the left than his predecessor, with whom he had differed on some policies, the new president gave no indication of major deviation from the López policies, except to pledge himself "not to use repressive measures to obtain social normality" in Colombia. The peaceful and orderly election and change of administration were in keeping with Colombia's record, unique in Hispanic America, of almost a third of a century of unbroken acquiescence in the verdict of the ballot-box.

Government education policies met with opposition when, on May 8, students in Bogotá, supported by the Conservative news organ, *El Siglo*, staged a protest strike against new requirements for matriculation in the universities. These, designed to raise academic standards and to force changes in curricula in parochial schools, had been the subject of bitter controversy on their enactment.

Important to the government's policy of furthering domestic ownership and nationalization of some industries, was the Supreme Court decision in May in favour of the government suit to collect a 2½ per cent "pipeline tax" on operating revenues of oil companies.

During November, an anti-Jewish campaign, largely supported by small merchants, was intensified in Bogotá and spread to other cities.

In October Colombia and the U.S.A. simultaneously raised their respective legations to embassies, and at the Pan-American conference (*q.v.*) at Lima co-operated closely in defence of democracy. On Nov. 28, a United States naval and military mission was sent to Colombia.

In July, Colombia formally announced intention to withdraw from the League of Nations. A sharp dispute with Germany broke out in December, when Berlin police detained the newly arrived Colombian minister because he photographed Nazi rioting against Jews. The minister was peremptorily withdrawn.

Education. In 1936 there were 8,459 primary schools

(enrolment 553,700), largely supported by the National Government, 438 secondary (enrolment, 31,122), about 80 per cent privately controlled, although Government aided; and two important national universities, at Bogotá and Medellín

Finance. The monetary unit is the peso (value: 2*s.* 6*d.*).

Trade and Communications. In May 1938, the last link of the Bogotá–Quito highway was opened Air transport service is quite important in internal communication, owing to the inadequacy of land routes from the coast to the main centres of population on the plateau There are 1,100 miles of railway, and approximately 500 miles of highway. The Magdalena river is an important artery of commerce.

In 1937, imports (largely textiles and other manufactured goods) totalled 167,770,000 pesos, with the United States leading (48·5 per cent), Great Britain second, and Germany declining to third. Exports were 182,991,000 pesos (besides 32,019,000 pesos value of gold), 15·9 per cent gain over 1936, with the United States taking 60·1 per cent. Purchases by Great Britain and Germany decreased; those of Belgium and Italy rose sharply. Coffee comprised 53·5 per cent of exports, petroleum 19·1 per cent, and bananas 3·8 per cent.

Agriculture and Minerals. In addition to the principal agricultural exports, Colombia produces sugar, wheat, cotton, cacao, and tobacco, largely for domestic consumption. The pastoral industry annually produces about 3 million pesos value of hides for export Colombia ranks ninth in world petroleum production (estimated production in 1938: 21,315,000 barrels), second in platinum, and first in emeralds. Gold is mined in considerable quantity. Manufacturing for domestic consumption has advanced under the protective tariff policy, and employs 300,000 persons. (L. W. Be; X.)

COLONIAL POLICIES. While economic considerations may be said to remain of first importance in colonial policy, since the adoption of the Covenant of the League of Nations in 1919, involving the principle of trusteeship for backward peoples, colonial development has been characterized by a widespread effort to reform the administration of native affairs and to improve the economic and social conditions of the native peoples. There are, however, considerable differences in the policies adopted by the colonial powers in carrying out these objectives.

Events in the West Indian and in other colonies have given occasion for a public discussion regarding the adequacy of the British system of control through the Colonial Office. Lord Hailey, in *An African Survey*, dismisses the suggestion for the establishment of a Colonial Council as alien to British ideals of parliamentary control, and suggests the institution of a Standing Colonial Committee of the Houses of Parliament.

British colonial policy of to-day looks to government through parliamentary institutions as the political future of its colonies, and encourages the devolution of a large measure of authority to the colonial governments. But in colonies where self-government would involve either the predominance of a European minority or the ultimate political supremacy of a native majority, difficulties stand in the way of its complete realization, and a compromise is sought by the creation of legislative bodies, with nominated or elected non-official members and an official majority, and by the development of local self-government among the tribal authorities. The acceptance of the principle that native institutions are themselves of value as agencies of government, and can be brought into agreement with civilized conceptions, was elaborated in a series of political memoranda by Lord Lugard in the early part of this century. This system, known as indirect rule, has been adopted with success in Africa and forms the basis of native administration in Malaya, local native administrations with both executive and judicial functions now administer the affairs of the native people under the guidance of the British officials. The future of the system depends both on its powers of adaptation to the strain of local government as social services expand and to the growth of native political and national aspirations. Its future relation to parliamentary government is obscure, and it is significant that in advanced native communities political interest centres on the municipal and legislative councils rather than on tribal self-government

British policy in countries where backward native peoples form a majority of the inhabitants may be contrasted with the policy of native administration in the Union of South Africa and in Southern Rhodesia. In the Union the main objective of policy is the preservation of the social and economic standards of European civilization. The native people are relegated to a separate and subordinate sphere, and are provided with their own system of representative government, culminating in a consultative body, the natives' representative councils. In Southern Rhodesia policy is in the same direction In both countries it is accompanied by comprehensive measures for the social and economic improvement of the native areas in which the main body of the native people are to be segregated.

French policy aims at the close economic and political association of the colonies with the mother country. An early colonial doctrine of "assimilation", which envisaged the wide admission of the native people to French citizenship, has given way to a policy aiming at the progressive spread of French culture and the close association of the people with the French administration. The indigenous chiefs are used as agents of the government, and education is directed towards the production of an *élite* who will, under French direction, take their part in the social and economic development of their country. These political aims are closely allied to a policy of *mise en valeur* which has the dual aim of fostering local prosperity and enriching the mother country Citizens of all races vote in the election of deputies who represent the colonies in the Paris Chamber; to-day, however, the numbers of admissions to French citizenship are restricted. The ministry for the colonies exercises a close control of policy through visiting commissioners, and legislation is mainly through ministerial decree; the government of the colonies is thus highly centralized. A system of consultative councils on the French model, on which natives are largely represented, assist in local administration and provide scope for the political ambitions of educated natives.

Belgian policy forms a strong contrast to the excesses of the Congo Free State. While economic development through both government and private agencies is widely encouraged, the rights of the natives are carefully protected in a Colonial Constitution, and by means of a permanent Commission for the Protection of Natives. A Colonial Council advises the minister for the colonies and exercises control over legislation and administration. A system of indirect rule, giving existing tribal authorities a measure of self-rule, is being developed throughout the Congo and Ruanda Urundi

Portuguese colonial policy has been infused with new

vigour. The Organic Charter and the Overseas Administrative Reform, under the Salazar regime, introduced in 1933, lay down the general principles of a liberal native policy aimed at the encouragement of local government through the recognized tribal authorities, the protection of native lands, and the abolition of enforced labour. Among other colonial powers, the Netherlands have since 1925 granted a measure of self-government to their colonies, and where possible have adopted a system of indirect rule which approximates to that in British colonies, but the colonial territories remain closely bound to the mother country by economic and political ties.

Although there is a wide divergence in the principles underlying the colonial policies of the various powers, all are faced with the same task of fulfilling the two aims of what Lord Lugard has described as the "dual mandate"; they must allay the dissatisfaction of the subject peoples shown in riots and risings by offering a fair return for the obligations they impose, and allow a reasonable outlet for a growing desire for social and economic improvement; they must administer colonial resources in the general interest if they are to prove to other powers that their policy is not one of selfish exploitation.

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COMINTERN: *see* INTERNATIONAL.

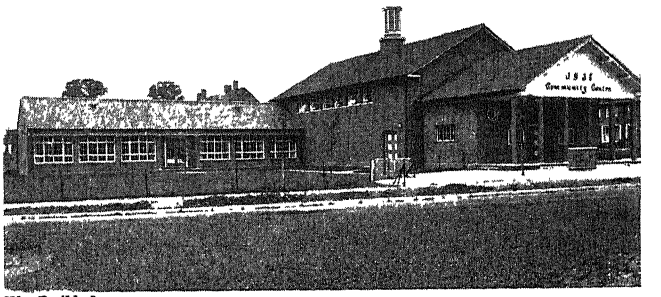
COMMODITY PRICES: *see* PRICES, STATISTICS OF.

COMMON COLD: *see* EAR, NOSE, AND THROAT, DISEASES OF.

COMMUNITY CENTRES: *see* HOUSING.

COMMUNITY CENTRES AND CLUBS. The great increase of clubs and community work which has taken place and is still taking place in Great Britain is largely due to the work of three organizations · the National Association of Boys' Clubs, the National Council of Girls' Clubs, and the National Council of Social Service. These three organizations owe much of their strength, if not their very existence, to the far-sighted and generous assistance of the Carnegie United Kingdom Trustees and the personal interest of Their Majesties the King and Queen, H.R.H. the Duke of Gloucester, H.R.H. the Duke of Windsor (when Prince of Wales), and other members of the Royal Family. They are now being further strengthened by the co-operation of local authorities and the work of the National Fitness Council. In their distinctive but allied spheres the Y.M.C.A. and Y.W.C.A. (*qq.v.*) have a fine record of achievement.

The main purpose of clubs may be summarized as to provide for the constructive use of leisure. The overwhelming majority of boys and girls of Great Britain leave school at fourteen (to be raised from Sept. 1, 1939, with exemption in approved cases, to fifteen). The four or five years which intervene before maturity are years of immense potential development, which influence and largely decide the habits, interests, physique, and character which will be permanent in maturity. There is appalling wastage and loss to the community if boys and girls do not have the opportunity for this development which their employment and home circumstances seldom provide. A good club can and does fill the gaps; boys and girls can be attracted, in the first place, by games and recreation, but they must be held by something far stronger. This impulse is found by utilizing the instinct for comradeship in order to create a society which will evoke the loyalty of its members. In membership of such a self-governing society as a club the boy or girl finds a healthy pride, an objective to serve and an opportunity for achievement, but more than that he or she experiences a fellowship which, however much it may have been besmirched by false sentiment, remains one of the foundations of the ideal community and an incentive to worthy action. The success of the method may be shown by the very high standards reached by clubs in physical training, sport, handicrafts, and drama, the most successful clubs being often those whose members are drawn from the poorest homes.



The Builder]
WELWYN GARDEN CITY COMMUNITY CENTRE

The following figures give some account of the scope of the movement:

The National Association of Boys' Clubs, 17, Bedford Square, London, W.C.1, has 1,600 affiliated clubs, with a membership of 145,000 boys, approximately 80 per cent of whom are between fourteen and eighteen. There are fifteen County Associations and fourteen City Federations of Boys' Clubs. These figures take no account of the many clubs which are unaffiliated either because they do not reach the minimum standard or for other reasons.

The National Council of Girls' Clubs, Hamilton House, Bidborough Street, London, W.C.2, has, with its associated organizations, the Association of County Clubs, the British Home Fire Girls, the Girls' Friendly Society, the National Home Fire Girls' Association, and its 55 local Unions, a total membership of approximately 202,000. The majority of the members are between 14 and 25.

The Community Centres and Associations Committee, which has taken the lead in the promotion of community centres, works under the ægis of the National Council of Social Service, 26, Bedford Square, London, W.C.1. There are now upwards of 140 Community Associations concerned with the development and co-ordination of all kinds of community efforts. The Slough Social Centre, one of the most interesting experiments, differs from other centres in seeking to promote the community spirit by uniting those who use the Centre in membership of the Central Club. Further, by providing adequate accommodation for youth, it has avoided the mistakes made elsewhere.

It has been possible here to summarize only very briefly the principles and methods of the movements. More detailed information may be had from the literature published by the Associations mentioned above. (E. F. P.)

CONGO: *see* BELGIAN CONGO; FRENCH EQUATORIAL AFRICA.

CONGREGATIONAL CHURCHES. The most notable event in British Congregationalism during 1938 was the removal of the accumulated deficit of £76,000 on the

London Missionary Society—the Society supported by Congregational Churches throughout the Empire. In addition, promises have been made amounting to an extra income of between £15,000 and £20,000 a year

The Rev. J Ernest James, B D , of Allen Street, Kensington, was elected to succeed the Rev R. W Thompson, M.A , B D., of Bristol, as chairman of the Congregational Union of England and Wales. The Rev. J. G Drummond and the Rev. J McKane were elected chairmen of the Scottish and Irish Unions respectively, and Principal J. Morgan Jones chairman of the Welsh Union of Independents

English Congregationalism has under consideration a scheme for dealing with the problem of ministerial settlements and removals and also a proposed new hymn book, the present one, the *Congregational Hymnary*, dating from 1916.

The Rev H F. Lovell-Cocks has succeeded Dr. T Hywel Hughes as Principal of Edinburgh College, and the Rev T. S. Taylor Dr. A R. Henderson at Nottingham.

In Canada the Congregational Churches are now merged with the Methodists and most of the Presbyterians in the United Church of Canada. In South Africa and Australia attention has been given to the question of Church Union, especially with these two denominations. In New Zealand negotiations have been suspended. In India the South India United Church scheme has been under discussion by the different parties concerned—Anglican, Methodist, and the already United Church (Presbyterian and Congregational). In Newfoundland the churches have felt the full blast of the economic situation, while the same also applies to the West Indies. (A. P.)

United States. The Congregational churches have a membership of 1,030,914, organized into 6,109 congregations. During 1938, these churches received 58,490 new members, an increase of about 3,000 over the number of new members received the preceding year. Pension funds have been enlarged so that all pastors reaching the age of 65 may retire on an adequate pension, and this plan is being extended to include the lay workers of the denomination. The Congregational churches are developing a new interest in public worship, in the re-establishing of historic forms, and the observance of the traditional Christian year. The Lenten season and Advent, which received hardly any notice in most of these churches twenty years ago, are now recognized as worthy features of the church programme.

The foreign work of the churches, administered by the American Board of Commissioners for Foreign Missions, has been under unusual handicaps due to war conditions in China and Japan. But in spite of great hardships the missionaries have remained at their stations and have helped the refugees to the limit of their resources.

CONGRESS OF INDUSTRIAL ORGANIZATIONS, a federation of labour unions in the United States and Canada, of which John L. Lewis, president of the United Mine Workers, is president. Formed on Nov. 9, 1935, as the Committee for Industrial Organization, the committee held its first constitutional convention in Pittsburgh on Nov. 14–18, 1938, changed its name, adopted a constitution, named Mr. Lewis president, Philip Murray and Sidney Hillman vice-presidents, and James E. Carey secretary.

The first objective of the C.I.O. was to organize the employees in the mass-production industries, such as steel, automobiles, and textiles, into industrial unions. It took over three weak American Federation of Labor unions in those fields, and started an intensive organization campaign in the autumn of 1936. Two years later the C.I.O. reported that the membership of the Amalgamated Association of Iron, Steel, and Tin Workers had grown from approximately 10,000 to more than 525,000 ; the United Automobile Workers from 30,000 to 381,000, and the textile union from 25,000 to 450,000. (*See* also AMERICAN FEDERATION OF LABOR ; STRIKES AND LOCKOUTS.)

CONNAUGHT, PRINCE ARTHUR OF, was born at Windsor on Jan. 13, 1883, and died in London on Sept. 12, 1938. He was the only son of the Duke of Connaught, and therefore was first cousin to King George V. He was educated at Eton, whence he proceeded to Sandhurst, and in 1901 was commissioned to the 7th Hussars. His association with the Royal Scots Greys, of which he was made Colonel-in-Chief in 1921, began in 1907. He served in the South African War and throughout the World War, in which he was extra A.D.C. successively to Sir John French, Sir Douglas Haig, and Sir Charles Monro. He was twice mentioned in dispatches, and in 1915 was made a C.B. He retired from the army in 1919.

In 1906 the Prince went to Japan to invest the Emperor Mutsukito with the Garter. He again went to Japan in 1912 and 1918. After the accession of George V he continued to perform many public duties while the King's sons were too young to do so. He was one of the Counsellors of State during the King's Durbar tour in India in 1911–12. In 1913 Prince Arthur married the Duchess of Fife, daughter of the Princess Royal. From 1920 to 1923 he was Governor-General of the Union of South Africa. The Prince was created K.G. in 1902, G.C.V.O. in 1899, and G.C.M.G. in 1918 ; and since 1936 he had been personal A.D.C. to the King. He is succeeded by his son, the Earl of Macduff.

CONSERVATIVE PARTY, THE. During 1938 the policy of the National Government in Great Britain, to which the Conservative Party of course subscribes, has undergone no outward change. This policy was thus enunciated by the prime minister on assuming office : (1) to keep the peace ; (2) to make Britain so strong that nobody shall treat her with anything but respect ; (3) to maintain and increase the prosperity and activity of trade and employment ; (4) to carry on the improvement of the condition of the people.

The year 1938 has seen the application of this policy to situations of unusual complexity both at home and abroad ; these in their turn have revealed acute differences within the party. One may perhaps account for these by relating them to one central problem, the difficulty of reconciling traditional Conservative opinion with the vagueness and flexibility of a National Government, seeking by " Highest Common Factors " to unify the partly disparate aims of the Liberal and Labour element with those of the Conservative majority. Though these discords and conflicts increased in violence throughout the year, they did not culminate in active revolt : the process, furthermore, was not accompanied by any marked transfer of popular allegiance to the opposition. Each of the four main points of government policy contributed to this division of views.

(1) " *To keep the peace* ". With inexhaustible energy and steadfastness Mr Chamberlain has insisted on a foreign policy based on active appeasement. A sick and mutilated League of Nations could only regain health and authority if it were not overloaded with tasks beyond its strength. European peace could yet be maintained if nations would consent, under British tutelage, to break away from the fatal vicious circle of distrust and hostile alignments, by a resolute attempt to understand and sympathize with each other's problems. Meanwhile, in view of existing weakness, alike of collective security and of imperial defence, British

diplomacy must "go slow". Personal contacts were the surest prelude to the written agreement. So by the close of the year the prime minister was able to point to successive treaties with Italy, Eire, Germany, and the U S A Conservative opinion would fain applaud this policy and echo the hope that inspires it. Yet a large and growing body of opinion agrees with Mr. Eden and others in opposing a militant realism (the "forward policy" of Palmerston or Disraeli) to the Gladstonian romanticism of the prime minister. It has seemed impossible to reconcile appeasement to the "stand and deliver" tactics of the totalitarian states. To "go slow" seems to commit Great Britain to a "policy of scuttle" a series of rearguard actions dragging her prestige ever downward to the precipice edge. Throughout the year the pendulum swayed to and fro—impending revolt forever being arrested by the "symbolic figure" of the prime minister.

(2) "*Strength through rearmament*". Nowadays the defensive security of Great Britain is an imperial problem, in view of the ultimate dependence of the entire Commonwealth on the mother country. Thus a co-ordinated system of long range planning, spatial and temporal, finds equal expression in the government's decision to carry out a system of compulsory national registration in the event of war; the decentralization of imperial defence; the correlation of Britain's defensive policy with that of France; and the co ordination of industry. Can Great Britain, by exerting herself to the utmost along lines of voluntary co-operation, belatedly overhaul the superior efficiency of the totalitarian powers? Again, extremist Conservative opinion, led by Mr. Churchill, has strenuously attacked the government's defence programme as inadequate: alike in its failure to anticipate a critical emergency by adequate provision of economic resources; its slowness in developing air-raid defence; the insufficiency of Air Force expansion, and its helplessness in coping with the individualism of industry. In these terms the crisis provided in retrospect some doubts of the government's administrative capacity, and some Conservative suspicion of the survival of the traditional Tory indolence that prefers decentralization and impromptu effort, with all its wasteful inefficiency.

(3) and (4) "*The development of trade activity and social amelioration*". Conservative opinion accepts, in part with approval, in part with great reluctance, a policy which would assist staple industries and agriculture alike by a cautious paternalism that would leave unimpaired the initiative of each interest involved. Such a "Highest Common Factor" creed stands half way between the extremes of Free Trade and of economic nationalism. Conservative opinion of the old order still favours the latter, and hopes to be able to construe trade difficulties in terms of a campaign for whole-hog Protection. Thus Coal and Farming have expressed in the past year their dissatisfaction with government policy. Though individualist competition had brought a large section of the coal industry to the verge of suicide, the Coal Act, providing for compulsory regional amalgamation and the purchase of royalties, met with extremist opposition. Again, certain branches of British agriculture still anticipate a type of government assistance which will yet not interfere with their liberty of action. While £40 millions are being spent annually in direct assistance, a farmer will chafe at the dubious benefits of market reorganization, restricting quotas, and other forms of bracing regimentation. Forgetful of the direct dependence of agriculture on industrial prosperity (in its turn conditional on an equitable interchange with good friends and customers abroad), the militant Tory still hopes to thwart the Free Trade majority in the Party by an ever-widening wedge of Protection (T. S.)

CONTRACT BRIDGE. Conservative estimates for 1938, based on government sales of playing cards, bridge book sales, etc, placed the number of players in the United States and Great Britain alone at between 15,000,000 and 18,000,000. Of this number, more than ninety per cent played the Culbertson system; the remainder being split up among several variations of the basic system.

During the early part of the year, considerable flurry was caused by the introduction of "Five-Suit Bridge", but this innovation proved short-lived Originating in Vienna, this type of bridge, based on packs containing five suits, received its greatest impetus in England when the King and Queen visited a bazaar and bought the new packs. This incident, widely reported by American newspapers and magazines, led to the game's being taken up by experimentally-minded Americans, but the fad lasted less than two months. Thus, Ely Culbertson's early observation that "the average player had not yet thoroughly learned how to play with four suits, let alone with five suits" proved prophetic.

The consolidation (in late 1937) of the two rival bridge associations (American Bridge League and United States Bridge Association) into one powerful governing body (American Contract Bridge League) had its expected result · tournaments flourished in every part of the United States. The annual World Bridge Olympic, held on April 20, enjoyed unprecedented success, with 192,452 players, participating in 57 different countries

The International Bridge League held its annual tournament in Oslo. Teams representing eleven European countries participated. Hungary was the victor. It was voted to hold the 1939 World Tournament in New York, to coincide with the New York World's Fair.

Perhaps the greatest single influence during 1938 for creating new players and improving experienced ones was a device known as "Autobridge". This invention reproduces actual playing conditions, and makes it possible for one person to take a hand against two experts, and with one expert partner, to play perfectly, automatically.

The few changes in the Culbertson system during 1938 affected, primarily, the opening three-bid. Heretofore, such opening bids were either strong or weak bids, the true nature of which was not made known until succeeding rounds of bidding. The new requirements were put as follows:

For a major suit three-bid, a trump suit at least six cards long with no more than one loser in the suit and no more than one-plus honour-trick outside the trump suit; total playing-tricks of hand between six and 7½. For a minor suit three-bid, an absolutely solid suit of six or seven cards with same general specifications (six or 7½ total winners in the hand).

The second change in the system was to put the two following bidding sequences on identical bases:

1. East	South	2. East	South
1 ♡	2 ♤	2 ♤	3 ♡ or 3 ♢ or 3 ♧

As always, South's two-spade bid in sequence 1 remained a strong bid asking for a light raise. Now, South's three-heart, three-diamond, or three-club overcall in sequence 2 means precisely the same as the two-spade bid in sequence 1, *i.e.* a strong hand (though not necessarily a solid suit) inviting a light raise. Besides these two minor revisions, there was one addition to the Culbertson system. This

involved a forcing bid by the partner of an overcaller. In such a sequence as East, one club ; South, one heart ; West, pass ; North, two spades, North's two-spade bid (a single jump response) is forcing for one round. This, according to Ely Culbertson, makes it much easier for the so-called defending side to reach game after the bidding has been opened by the opponents

In late 1938, leaders in contract bridge (notably Ely Culbertson and William E McKenney, secretary of the A.C.B L) publicly voiced the proposal that contract bridge scoring be changed, so that the minor suits (diamonds and clubs) would be on an equal basis with the major suits, in so far as scoring value is concerned ; and that with this change, a " sub-slam " should be put into the game. With all suits on an equal basis and with the possibility of making game at four-odd in diamonds and clubs as well as in spades and hearts, the five-level of bidding would be left free for this sub-slam idea and, thus, accurate bidders could earn a bonus (200 or 300 points) for risking a game, to contract for and fulfil a sub-slam at the five-level. According to agreement made between all law-making bodies in 1935, no changes in the rules or scoring can be undertaken until 1940, but it is very probable that the mentioned proposals will receive attention of a preliminary committee in late 1939, and that they will be adopted in 1940. It is known that many players favour these changes. (E. CUL.)

CO-OPERATIVE MOVEMENT. The Co-operative movement substantially increased its share of the national retail trade during 1937. Official statistics show 1,100 distributive societies with 8,085,000 members (increase 277,000 or 3½ per cent), sterling turnover £251,393,047 (increase £17,548,697 or 7½ per cent), share and loan capital of £100 millions (increase proportionate). These figures will certainly be exceeded in 1938, as increases were visible up to August and greatly outweighed subsequent small declines. Thus 1938 will substantially exceed the previous sterling record turnover of 1920, £254,158,144, when war-time price levels prevailed. Contrast between 1920 and 1938 can best be measured by the number of employees, namely, 201,509 in 1920 and 335,705 in 1938, despite rationalization.

The turnover of the four wholesale societies in the last completed year, £151,270,000, represented a substantial advance, and provided employment for 73,000 workers in distributive, productive, and transport services. The Co-operative Insurance Society now has a premium income of £8,415,600 as against £7,694,000 in 1936. A number of expansions in productive capacity have been made and as in recent years, milk treatment and distribution shows a big trading development. There are, however, still difficulties in regard to overlapping of functions and trading areas in both retail distribution and production, and attempts to deal with these handicaps radically have, so far, failed to command any measure of the support necessary in voluntary federations, the units of which enjoy full statutory autonomy.

Economic self-examination was an important feature of 1938, when the economic survey of retail services was completed and approved by the Co-operative Congress. It revealed, *inter alia*, the total number of co-operative shops as 24,000, far higher than had been believed. The results showed that co-operative retailing is increasing more quickly than that of the total retail trade of the country. Some departments are doing better than others. Grocery is virtually stationary. Dairy work, on the other hand, is expanding rapidly, and accounts now for about £20 millions per annum. The survey recommends amalgamation of societies where necessary to secure economies of service.

Relations between the Co-operative Party and the Labour Party, previously cordial, were not so happy last year, the Co-operative movement preferring free association with, rather than close affiliation to, the Labour Party. (E. T.)

COORG. This tiny Indian province (area 1,593 sq. miles ; pop. 163,327) has not yet reached the dignity of autonomy, the resident at Mysore (Col J. H. Gordon) being *ex officio* its chief executive and judicial authority. Coffee is its best known product , rice and forest-timbers come next in importance.

COPELAND, ROYAL SAMUEL, United States Senator, was born in Dexter, Mich., on Nov. 7, 1868, and died at Washington on June 17, 1938 Though he came from the same state as President Roosevelt and belonged to the same political party, he was one of the bitterest critics of the " New Deal " policies. He began his career as a doctor, specializing in ophthalmology, and taught his speciality in Michigan and later in New York, where he migrated in 1908. Closely associated with Tammany Hall, the New York Democratic party organization, he was appointed Commissioner of Health for New York City in 1918, and was Democratic Senator for New York State from 1923 on. In 1937 he entered as Tammany candidate for the Mayoralty, but was crushingly defeated in the primary elections both of the Democratic and Republican parties, one of the worst reverses Tammany has ever suffered.

COPPER. Nine copper-producing countries with outputs, present or past, in excess of 50,000 tons accounted for ninety per cent of the world total in 1929 and 89 per cent in 1936, which is only a comparatively small change, but in the meantime there has been a radical change in the status of many of the individual producers. World output as a whole decreased by 53 per cent between 1929 and 1932, increasing by 1937 to 118 per cent of the 1929 high level ; of this total, production outside the United States dropped only 26 per cent and recovered to 53 per cent above 1929, while the United States output declined by 75 per cent and recovered to only 82 per cent of the former high level ; as a result, the United States proportion of the total has decreased from 49 per cent to 33 per cent. The United States still retains the position of leading producer, followed by Chile with eighteen per cent, Canada ten per cent, Rhodesia ten per cent, Belgian Congo seven per cent, Soviet Union four per cent, Japan three per cent, and Peru and Mexico each two per cent. All major countries except the United States, Mexico, and Peru, and many of the minor ones, were well above the 1929 level in 1937.

World Production of Copper

(In thousands of metric tons)

	1929	1932	1935	1936	1937
Belgian Congo	135·5	54·0	107·7	95·7	150·5
Canada .	109·9	113·7	188·9	191·3	238·1
Chile . .	316·8	103·2	267·1	256·2	413·2
Japan . .	75·5	71·9	70·9	73·8	75·9
Mexico .	78·7	34·1	41·6	32·6	46·8
Peru . .	54·4	21·4	29·7	33·4	35·4
Rhodesia .	5·9	73·0	148·2	140·0	212·7
U.S.S.R .	25·8	30·7	63·2	83·0	92·5
United States	931·1	231·8	344·8	557·9	761·4
World Total	1,921·6	905·5	1,459·5	1,677·9	2,272·8
Exc. U.S. .	990·5	673·7	1,114·7	1,120·0	1,511·4

Rearmament activities were largely responsible for heavy increases in production in 1937, to a world output of 2,273,000 metric tons, an increase of 26 per cent over 1936.

The chief countries contributing to this increase were: Chile 61 per cent; Congo 57 per cent; Rhodesia 52 per cent; United States 37 per cent; and Canada 24 per cent. Production in the United States began to decline in September, continuing to July 1938, since when there has been marked improvement, but not to the level of the 1937 average, with the result that the output for 1938 is estimated at 34 per cent less than in 1937, or approximately 500,000 tons Production outside the United States declined slightly in 1938, chiefly in the first and third quarters, but with a marked pick-up in the fourth quarter, which cut the drop for the year to about four per cent, for an output estimated at 1,450,000 tons This gives an estimated world total of 1,950,000 tons, a decrease of fourteen per cent from 1937 Canada and the Soviet Union, among the major producers, and Yugoslavia and Australia among the minors, seem to have had increased production in 1938, while most of the others had decreases, Japanese smelter output was higher, but it is not yet known how much of this was from domestic and how much from imported ores During most of 1938, deliveries have exceeded output, and by November stocks had been reduced by about 45,000 tons During 1938 the international copper cartel made three changes in production quotas, from Dec 1, 1937, to July 1, 1938, the operating rate was set at 105 per cent; to Oct. 15, at 95 per cent, then reverting to 105 per cent, but on Oct. 17 all restrictions were removed, retroactive to Oct. 15 The members of the cartel supply about 75 per cent of the world total, and the percentage figures on which quotas are based refer to the operating rate at the time the cartel was formed and not to the actual capacity of the plants, which is about fifty per cent greater.

All the countries listed in the table, with the exception of the United States, Japan, and the Soviet Union, are comparatively small consumers of copper, and hence produce mainly for export. The chief copper-consuming countries, in order of importance, are the United States, the United Kingdom, Germany, the Soviet Union, Japan, and France, which cover nearly ninety per cent of the total consumption The United States is the only major consumer with an export surplus; all others are dependent on imports for a large proportion of their supply. In spite of the fact that on the average 22 per cent of the output is exported, consumption of copper in the United States far exceeds the new copper supply, the remainder coming from secondary metal recovered from previous use, a source which yielded a larger amount of copper during the depression years than was obtained from the primary production.

The United Kingdom, the second largest consumer, has only a nominal output of a few thousand tons, and secures practically its entire supply from imports, a growing amount of which is re-exported. Most of the imports are from Empire sources, though the United States and Chile furnish appreciable amounts. Ore and matte make up only about ten per cent of the imports, the remainder being divided in about equal proportions between rough copper and electrolytic. German refineries are now producing about 225,000 tons annually, about 85 per cent of which comes from imports, seventy per cent as metal, and fifteen per cent in ore; exports are negligibly small. Russian production supplies about two-thirds of the demand, and imports one-third, while in Japan production is slightly less and imports are proportionately higher. France has practically no domestic output, and imports almost the entire supply. (*See* also METALLURGY; MINERAL AND METAL PRICES.) (G. A. Ro.)

COPRA: *see* VEGETABLE OILS AND ANIMAL FATS.

CORDAGE FIBRES: *see* SISAL, HEMP, AND CORDAGE FIBRES

CORN: *see* GRAIN CROPS.

COSMETICS: *see* SOAP, PERFUMERY, AND COSMETICS.

COSTA RICA, a Central American republic, capital, San José (pop. 45,000), president, León Cortés; area, 23,000 sq. m., population (1936 estimate), 578,040. Throughout 1938 Costa Rica's boundary dispute with Panama was active. A boundary treaty signed Sept. 26 met such violent popular protest that in October it was withdrawn unratified In November strong measures were taken to eliminate the "unfavourable" trade balances of Italy and Japan. Road construction, especially of the Pan-American highway, received strong stimulus during 1938 In 1937, imports increased 41·5 per cent to $11,878,547, principally from the United States and Germany; exports were $11,512,097 (a 38·5 per cent increase), to the United States, Great Britain, and Germany. Coffee and bananas are the mainstays of Costa Rican economy. Further development of the banana industry was promised in 1938 with the grant of a 50-year concession for cultivation of 6,880 acres on the Pacific coast. Cacao is also important. The monetary unit is the colon (value . 9d.). The budget for 1937 was 32,597,873 colones. (L. W. BE.)

COST OF LIVING. The upward trend of the cost of living characteristic of almost the entire world after 1933 continued into 1937–38, but only in France and Norway (excluding war areas) did 1937–38 indexes of food prices go higher than in 1929. In most nations 1937–38 food prices were higher than 1936; but the official indexes of Germany, Austria, and South Africa show very little change The increases ranged around five points in the United States, Great Britain, Australia, Bulgaria, Estonia, Hungary, Ireland, Netherlands, Poland, and Sweden, and were definitely below 5 per cent in Canada, Australia, and Czechoslovakia. But Great Britain, Finland, Belgium, Norway, and Switzerland experienced almost a 10 per cent increase in food prices in 1937–38. During the first half of 1938 cost of living stabilized at approximately the 1937 levels in most of the nations. In France there was a slight increase and in Sweden a slight drop in living costs by midsummer of 1938. The food costs index for the United States stood at 78·7, Sept. 13, 1937, and 85·8 a year earlier.

The inclusion of rent, clothing, fuel, and sundries in a cost of living index tends to increase its stability as compared with an index based upon food prices only. The latter fluctuate faster and more sharply. This is apparent when the British, Canadian, and American indexes are examined. The accompanying table includes a varied assortment of items and not merely food costs.

The detailed figures of the United States, Canada, and the United Kingdom reveal that the trends of prices of different foods varied considerably both during 1937 and 1938. In the United States, meats were 13·2 per cent lower in Sept. 1938 than Sept. 1937; dairy products, 6·7 per cent lower; and eggs 3 per cent higher.

The accompanying table shows the relative trends of retail food prices in eleven countries from 1929 up to June 1938. The figures have been recalculated by the International Labor Office on a 1929 base, and this table cannot be compared directly with the table published for 1937 and previous years. (*See* also PRICES, STATISTICS OF; PURCHASING POWER OF MONEY.)

BIBLIOGRAPHY. Readers interested in additional information are referred to current issues of the *Monthly Labor Review*

Indexes of Cost of Living for Specified Periods for certain Countries

(Series recalculated by International Labour Office on base 1929 = 100 The indexes are based on the prices in the various countries of food, heating and lighting, clothing, rent and selected miscellaneous expenses *)

Country	Australia	Canada	France		Germany	Great Britain and N Ireland	Italy	New Zealand	Norway	Sweden	South Africa	U S.A.
Number of towns and localities from which prices were taken .	30	60	Paris	45	72	500	50	4–25‡	31	49	9	32–51‡
Original base 100 .	1923 27	1926	1914	1930	1913–14	July 1914	June 1928	1926–30	July 1914	July 1914	1914	1923–25
1929 .	100	100	100	—	100	100	100	100	100	100	100	100
1933 . .	78	78	94	87	77	85	80	79	89	91	88	76
1937 March . .	84	82	100	97	81	92	87	90	97	95	90	84
June . .	85	83	100	99	81	95	92	91	100	95	91	85
September	85	84	113	104	81	96	95	93	102	97	91	85
December .	86	84	118	110	81	97	98	95	103	97	94	85
1938 March . .	86	84	124	113	81	94	98	94	103	97	94	83
June . .		84 †	—	115	82	97	—	94 †	104	88	94	48

* Table from *International Labour Review*, July 1938 (p 140). Quarterly averages for 1937 computed in February, May, August, and November

† May 1938, instead of June Table reprinted in *Monthly Labor Review*, October 1938

‡ Monthly figures taken from smaller number of towns; figures for twelve-monthly periods from larger number.

(U.S. Bureau of Labor Statistics), the *Ministry of Labour Gazette* (British Ministry of Labour), and *The Labour Gazette* (Department of Labour, Canada) *Cf.* also *International Labor Review.*

COTTON AND COTTON MANUFACTURE. The world supply of cotton for the current cotton-crop year of 1938–39 (Aug. 1, 1938, to July 31, 1939) was estimated at approximately 50,775,000 bales. This is slightly larger than the preceding year, and marks the third consecutive year of record high world supplies of cotton. This situation is attributable to the large carry-over of previous crops, since production as a whole was smaller than in the preceding year, 1937–38. The world carry-over, as on July 31, 1938, was 22,612,000 bales, about 8,800,000 bales larger than the previous year's carry-over and approximately 11,000,000 bales larger than the ten-year average annual carry-over (1927–36). The 1938–39 supply of United States cotton was estimated at 25,525,000 bales, compared to 25,200,000 bales in other countries. United States cotton on hand July 31, 1938, throughout the world was estimated as 13,650,000 bales. The carry-over of other cotton was: Egyptian, 1,095,000 bales in 1938 and 701,000 bales in 1937; East Indian, 3,226,000 bales in 1938 and 3,209,000 bales in 1937; all other cotton, 4,639,000 bales in 1938 and 3,621,000 bales in 1937.

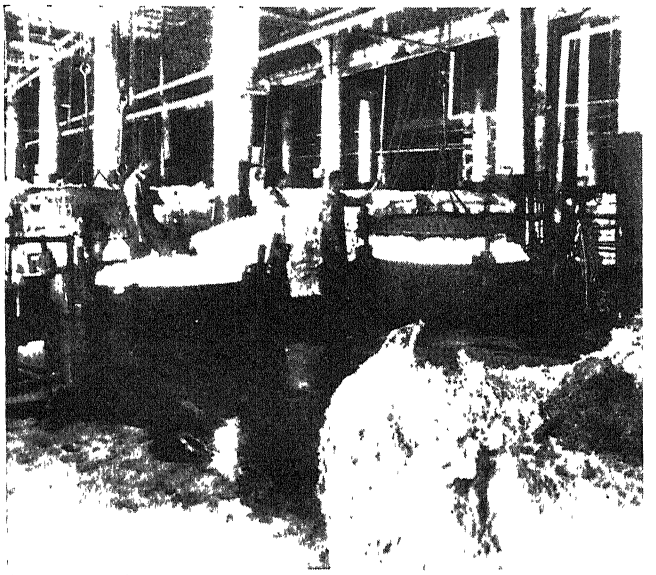
The large carry-over and huge accumulation of cotton is considered to be due to record production, the 1937 business recession which reduced cotton manufacturing, the war in China, and substitution of synthetic fibres.

World production of cotton in the crop year of 1938–39 was estimated at about 28,125,000 bales, approximately 8,425,000 bales less than the record crop of 1937–38, although 1938–39 production is estimated as about ten per cent larger than the ten-year average and is the third largest in history. About 75 per cent of the decrease is owing to the smaller crop in the United States. The 1938–39 cotton crop in the United States was estimated by the Department of Agriculture at 12,008,000 bales, as against the record yield of 18,946,000 bales the preceding year and a ten-year average crop (1927–36) of 13,204,000 bales. The present crop in China and Manchukuo was estimated at 2,300,000 bales, compared with 3,560,000 bales in 1937–38; Egypt, 1,523,000 bales in 1938–39 and 2,281,000 bales in 1937–38; Northern Brazil, 633,200 bales in 1938–39 and 707,600 in 1937–38. No figures are available for the U.S.S.R., which, with Egypt, Brazil, and China, is largely responsible for an increase in cotton production in the last ten years. China, however, increased production greatly only from 1932 to 1936, and has since declined.

World mill consumption of cotton in the year ending July 31, 1938, was reported as 27,565,000 bales, compared with 30,689,000 bales (the record high level in world consumption) for the year ending July 31, 1937. For the year ending July 31, 1936, world mill consumption was 27,708,000 bales, and the ten-year annual average (1927–36) was 25,555,000 bales

United States. The 1938–39 cotton crop of 12,008,000 bales was from 25,346,000 acres harvested, compared with 18,946,000 bales from 26,449,000 acres the preceding year. The 1938–39 acreage was the smallest since 1900, and the crop the smallest with two exceptions (1934 and 1935) for fifteen years. On March 12, 1938, 1,527,028 United States cotton growers voted in a referendum in favour of the Agricultural Adjustment Administration's programme to restrict the 1938 acreage planted to 27,400,000 acres, and to grant benefit payments and loans to growers subscribing to the programme. On Dec. 10, 1938, the A.A.A. again submitted a similar referendum to the growers, more than 85 per cent of whom approved. Thus, quotas will again be allotted to growers, and the total acreage planted in the spring of 1939 is expected to be about the same as in 1938. As accurately as can now be determined, government payments will be made of 3·6 to 4 cents per lb. on the farm's normal yield per acre of cotton for each acre in the cotton allotment. Benefits for participation in the A.A.A. soil-building plan are included. Farmers producing more than the allotted quota are to be penalized 3 cents a lb. on the excess in 1939. (X.)

Cotton Manufacture. The year 1938 has been a disappointing period for spinners, manufacturers, and merchants in the English cotton industry. Owing to the slackening off in world demand for textiles, Lancashire producers have been compelled to stop a large proportion of the machinery. The setback in trade was first noticed



Sport & General]
RAW COTTON STOCK DRYING IN A U S FACTORY

in the autumn of 1937, and has continued almost uninterrupted. There has been a smaller demand from world markets, in addition to a reduced turnover for the British home trade. Apart from what might be termed local difficulties, the situation was vitally affected by the international political developments. The period which preceded the crisis in September, and which terminated in the signing of the Munich Agreement, was an anxious one, for although English cotton spinners and manufacturers received fairly substantial contracts under the rearmament programme, they by no means compensated for the shrinkage in business with markets, which in normal circumstances would have been buying cotton fabrics.

The significant factor has been the further decline in the British export trade. The reduced turnover was attributed to the decline in the purchasing power of the millions of people in East and Far Eastern countries which had been brought about by the relatively low prices prevailing for agricultural products and raw materials generally. Apart from this angle, however, there was considerable overbuying of cotton goods in 1937 The world became glutted with cotton fabrics, and dealers and merchants first had to clear these heavy supplies before placing further business. It was only towards the end of 1938 that there were signs of these stocks being reduced. The market for cotton goods is world-wide and English manufacturers have found it increasingly difficult to compete with other countries. This is due to hours and wages in Great Britain being more favourable to the operatives than working conditions in most other countries. In some quarters, the opinion is held that the striking decline in the British export trade in cotton goods has to some extent been caused by the artificial price level for cotton yarns which has resulted from the various fixing agreements amongst spinners. These agreements, however, have stabilized selling rates, and there is no doubt that they have prevented serious financial losses, for without the price pacts, internal competition would have been acute and selling rates brought down to a ruinous level.

The spinning mills, in common with other textile sections, have suffered from the full force of the trade setback, and it is estimated that throughout 1938 the machinery has been worked between fifty and sixty per cent of full capacity. The falling off in trade placed a severe strain on the price-fixing agreements, for firms which loyally observed the pacts found that they were losing business to the comparatively small number of mills which remained outside the agreements. The situation reached a head in August of 1938, when it was decided to make a reduction in selling rates under what is called the 56's Weft Agreement. In September, spinners under the Medium American Ring Agreement abandoned the scheme, with the result that prices were immediately reduced. Other cuts in selling rates took place in October. The price scheme in the section spinning yarns made from Egyptian cotton has operated successfully, and in Sept. 1938, it was renewed for a further period of twelve months. In November it was announced that a comprehensive price agreement was being drawn up to cover all yarns made from American cotton, and this should be placed before the trade for consideration early in 1939.

Position of Manufacturers. The trade depression in the English cotton-weaving section has been more pronounced than in the spinning branch, for whereas the spinning mills have been operating under price-fixing agreements, cloth manufacturers have been competing against each other for the limited trade available, with the result that business, generally speaking, has not been profitable. It is estimated that production throughout 1938 has been around fifty per cent of full capacity. In October, however, business started to improve. Buyers were more prepared to place orders for export, but the whole trade outlook was still overshadowed by the European political situation. In the British home-trade market, dear stocks have had to be liquidated, but towards the end of the year larger contracts were placed with manufacturers, and there were indications of freer clearances in the wholesale and retail establishments The manufacturing section of the cotton industry has not yet dealt with the question of redundant machinery as has been the case in the spinning branch, but the matter has been receiving the attention of the responsible organizations, and there is a possibility of a scheme being devised.

Reorganization. In the King's Speech at the opening of Parliament in Nov. 1938, reference was made to the proposed Enabling Bill under which it is hoped to negotiate schemes which have for their object the rehabilitation of the industry and the maintenance of trade at a profitable price level. The proposals have been strongly opposed by a minority of interests, but the real strength of this opposition will not be disclosed until a ballot of the proposals has taken place. It is probable that the outstanding provisions in the Bill will deal with the fixing of selling prices and eliminating redundant machinery No serious difficulties will present themselves in coming to some price arrangements in the spinning branch, but the problem of fixing minimum selling rates for cloth is likely to present obstacles That reorganization is required in the industry is acknowledged on all sides. It is the methods under which it is proposed to attempt to recover lost trade that separate the sponsors of the Enabling Bill from the opposition firms. English cotton manufacturers are not behind the times in their efforts to improve the export trade, and evidence is brought to light each week of producing firms improving and developing their production methods so far as their finances will permit. In this respect the adoption of automatic weaving is becoming more widespread, and the pace would be accelerated if firms had sufficient capital resources.

The Outlook. At the end of 1938, traders were encouraged by indications of a larger turnover in the export

trade. They were also cheered by the probable benefits which are expected to accrue from the trade agreements negotiated with the United States and Egypt. It is difficult to take on the rôle of prophet when dealing with the English cotton industry, but it does seem probable that the first half of 1939 will witness an improvement in the turnover as compared with the last six months of 1938. Trading conditions, however, will be affected by any change in the political situation, either in England or on the Continent. If a long view is taken of the prospects in the English cotton industry, there appears to be little ground for optimism. Economic nationalism is resulting in almost all countries striving to produce sufficient textiles to satisfy their own needs. Where there is a surplus of textile fabrics, they are exported at prices with which English manufacturers find it virtually impossible to compete. Lancashire has already lost the huge trade formerly done in the commoner and cheaper styles of cotton fabrics, and the tendency will be to concentrate on fabrics which, for various reasons, cannot be manufactured, either in quality or at the same price level, by other producers. But even in this respect, it seems to be only a matter of time before Eastern and Far Eastern countries will develop their industries and the skill of the workers, so that these speciality fabrics can be manufactured by their own particular mills. This is the position which English manufacturers are facing, and every effort is being made to maintain the present export trade. There appears to be little hope of any material reduction in production costs. As a matter of fact, present tendencies point to a movement in the opposite direction, for it is only a matter of time before the employers will grant holidays with pay to the workers, and this will increase the total wage bill. The best thing that could happen would be a world improvement in commodity prices, for English spinners and manufacturers would then benefit from a general world improvement in trade, which, economists agree, would follow a development of this kind. (F. W. Ta.)

COUNTRIES OF THE WORLD: AREAS AND POPULATIONS

Name of State	Area (in Sq. Miles)	Pop. (000's omitted) (est. Dec. 31, 1936)	Pop. per Sq. Mile
Afghanistan	*c.* 250,000	*c.* 7,000	*c.* 28
Albania	10,800	1,100	101·9
*Andorra	191	5	26·2
Argentina	1,079,965	12,562	11·6
Australia, Commonwealth of	2,974,581	6,807	2·3
Belgium	11,775	8,331	707
Bolivia	*c.* 447,230	*c.* 3,000	*c.* 6·7
†Brazil	3,291,416	*c.* 42,395	*c.* 12·9
Bulgaria	39,825	6,238	156·6
‡Burma	261,000	15,600	72·2
Canada	3,729,665	11,080	2·9
§Chile	289,776	4,552	15·7
Chinese Republic	*c.* 2,845,740	*c.* 418,479	*c.* 147
Colombia	440,846	8,760	19·9
†Costa Rica	23,000	592	25·7
Cuba	41,634	4,370	105
Czechoslovakia[2]	*c.* 38,000	*c.* 10,300	*c.* 271
*Danzig, Free City of	754	405	537·1
Denmark	16,575	3,736	225·4
Dominican Repub.	19,325	1,520	78·7
Ecuador[1]	*c.* 337,000	*c.* 3,000	*c.* 8·9
Egypt	383,000	15,860	41·4
Eire	26,601	2,954	111
Estonia	18,371	1,130	61
Finland	147,811	3,603	24·4
France	212,736	41,910	197
†Germany[2]	*c.* 225,000	*c.* 77,950	*c.* 346·4
Great Britain and Northern Ireland, United Kingdom of	93,991	47,187	502
Greece	50,180	6,933	138·1
†Guatemala	*c* 48,290	*c* 2,420	*c* 50·1
Haiti	*est.* 10,204	*c.* 2,600	*c.* 25·9
†Honduras	*c.* 46,332	1,000	*c.* 21·6
Hungary[2]	*c.* 40,500	*c.* 10,049	*c* 248
*Iceland	39,709	117	2·9
India	1,575,185	358,600	227·7
Iran	*c.* 628,000	15,000	*c.* 23·9
Iraq	*c* 116,600	3,600	*c.* 31
§Italy	119,740	42,677	356·3
†Japan	178,756	70,500	394·4
Latvia	25,016	1,965	78·6
Liberia	*c.* 46,000	2,500	*c.* 54·3
*Liechtenstein	77	12	15·5
Lithuania	34,516	2,527	73·2
Luxemburg	1,000	298	298
Mexico	767,168	19,003	24·8
*Monaco	0·59	22	37,280
Netherlands	13,120	8,557	652·2
New Zealand	103,415	1,585	15·3
†Nicaragua	*c* 49,200	*c.* 850	*c.* 17·3
Norway	124,588	2,894	23·2
Oman	*c* 80,000	*c.* 500	*c* 6
Panama	34,169	*c.* 535	15·6
†Paraguay	*c.* 185,860	*c* 950	*c.* 5·1
Peru[1]	*c.* 532,185	*c.* 7,000	*c.* 13·1
Poland[2]	*c* 150,820	*c.* 34,774	*c.* 230·5
Portugal	35,670	7,301	203
Rumania	113,884	19,423	170·5
§Salvador	13,176	1,632	*c.* 123·3
*San Marino	38	14	368·4
*Sa'udi Arabia	*c.* 800,000	*c.* 4,500	*c.* 5·6
Siam	200,148	14,400	71·4
South Africa, Union of	472,550	9,707	20·5
Spain	194,200	25,050	128·9
Sweden	173,347	6,267	36·1
Switzerland	15,944	4,174	261·8
*Tibet	*c.* 450,000	*c.* 2,000	*c.* 4·4
Turkey	295,000	16,490	56·6
*United States	3,026,789	128,840	42·6
Uruguay	72,153	*c.* 2,066	28·6
U.S.S.R.	8,167,559	175,500	21·5
*Vatican City	0·17	1	5,882·3
§Venezuela	393,976	3,428	8·7
*Yemen	*c.* 75,000	*c.* 3,500	*c.* 46·6
Yugoslavia	95,558	15,174	158·7

[1] Including disputed area (approx. 100,000 sq. miles).
[2] Nov. 1938, including transferred areas.

Note. All the above-named States are members of the League of Nations, with the exception of those marked *, which have never acceded, and those marked †, which have resigned membership: Chile, Italy, Salvador, and Venezuela (marked §) have also announced their withdrawal from the League, the withdrawals becoming effective respectively, in May 1940, Dec. 1939, Aug. 1939, and July 1940.

‡ Burma's membership of the League is, for the present, covered by that of India.

COURSING. This sport was badly hit during the 1937–38 season by the heavy rains, which caused a shortage of hares, and by the prevalence of foot-and-mouth disease. The Barbican and the Netherby Cups, for example, had to be abandoned. Successful meetings were, however, held, *inter alia*, at Widdrington (Nov.), Druid's Lodge (Dec.), and Thanet and Altcar (Jan. and Feb.).

In the Waterloo Cup the winner, Mr. H. C. Pilkington's "Perambulate" (11 to 8 against) beat Mr. R. Rank's "Rotten Row", which for two days had been lame in one foot; and, of other leading events, the South of England Cup went to "Wet and Cold", and the Lonsdale to "Wrack Chain".

Regulations governing the registration of dogs were

tightened up with the object of preventing certain malpractices. In the 1937 and 1938 seasons registrations were respectively 9,891 and 10,261, of which 4,741 and 4,799 were re-registrations. The numbers of litters entered in the Stud Book were 1,318 in 1938, showing an increase of 114 over 1937's total.

Lt.-Col. Sir John Humphrey, president of the South of England Club and a very popular supporter of coursing, died on July 19

CRAIGAVON, JAMES CRAIG, 1st Viscount (1871–), British statesman, the first prime minister of Northern Ireland, having held that office since 1921. A biographical note will be found in the *Ency. Brit*, vol. 6, p 631

Lord Craigavon has long been known as the very embodiment of the solidarity of Ulstermen for the Unionist cause; and in Jan. 1938, in view of Mr de Valera's forthcoming discussions with the British government, during which he was going to raise the question of the partition of Ireland, he announced a general election for February (*see* NORTHERN IRELAND). Lord Craigavon was returned for Down unopposed, and the sweeping victory gained by the Unionists (followed by a visit by Lord Craigavon to Mr. Chamberlain in London) was hailed by him as " wiping the unification of Ireland " from Eire's programme, though Mr. de Valera did not see the matter quite in this light. Lord Craigavon also visited London in April, and on his return was able to report on certain financial benefits for Ulster agreed to by the United Kingdom government, including an increased share in the rearmament programme.



P. P. Bureau]
LORD CRAIGAVON

Lord Craigavon, being an elected member of the Northern Ireland House of Commons, is the only member of the British House of Lords entitled to the suffix " M.P." He married (1905) the only daughter of the late Sir Daniel Tupper, M.V.O., and has two sons and one daughter.

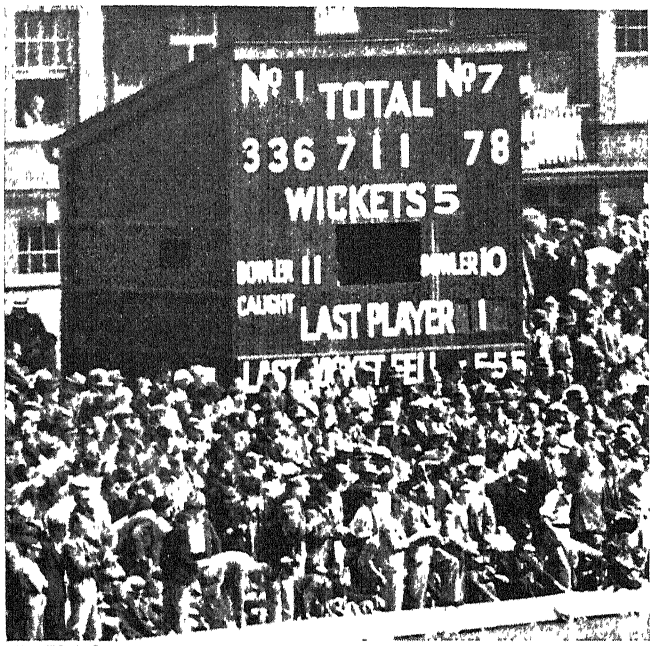
CRETE: *see* GREECE.

CRICKET. Those who followed cricket closely in the season of 1938 would have found it difficult to avoid the conclusion that, from the English point of view, it was a vintage year. In the rubber of test matches played against Australia in England during the summer, the mother country, captained by W. R. Hammond, did far better than had been expected by the majority of authorities on the game; and, even if England did not actually recover the Ashes, they had all the best of the series and, but for one or two magnificent individual performances, on various occasions, by Australian players, they must have won handsomely.

The test at Old Trafford was washed out with no ball bowled, and England lost at Leeds; but they were the better side in each of the other three matches, failing only to have enough in hand, by comparison with their opponents, at Lords and at Nottingham, to force home their advantage. At the beginning there was not really a very great deal between the two sides, and it would be hard to assess that difference in terms of percentages; but all the same there was a difference in the comparative ability of the two sides, and that difference was without doubt in England's favour. At Nottingham nothing but an inspired innings by McCabe stood between England and a victory by a wide margin; while at Lords England, in spite of having to face a very nasty wicket after rain, were still in a winning position when stumps were drawn. Australia won the Leeds match on their merits, but they were fortunate, in that the wicket on which the match was played proved to be one so favourable to spin bowlers. Their fortune lay in the fact that they had practically no choice about their bowlers, and O'Reilly and Fleetwood-Smith (the latter for the only time in the series) found conditions which were ideal for them, and took full advantage of the fact; while England, not knowing before the start how that wicket, which looked perfect, would play, left out a spin bowler and played a second fast one. The Australians deserve all credit for the manner in which they took advantage of their opportunity, and they snatched a win against a side which, in all other conditions of wicket, were superior and had they played their other available spinner, would as assuredly have won as they actually did in the next match at the Oval. The fifth and last test was a game played without time limit, while the previous games were limited to four days; and the longer that match went on the more apparent became the superiority of England, who eventually won by an innings and 579 runs. England's record score of 903 for 7 (declared) included a record individual score of 364 by Hutton.

The winning or the losing of a test series, however, is not the thing by which the success or failure of a season's play, or a tour, should be judged. It is the quality and quantity of the new entry, whether it be in county or test sides, which measure the value of the season. In this matter, England have a very great deal more about which to rejoice than the Australians. No new reputations were made by the tourists, though some reputations were enhanced. O'Reilly gave further proof, if any were needed, that he is the best spin bowler in the world to-day; and Bradman, as a batsman, while not so spectacular as he has been on some previous occasions, made a hundred in every test: and no one could ask for more than that. Brown, who was regarded as the best new-comer on the last tour, went one better, and was a match saver in every sense at Lords, while McCabe saved the first test practically with his own bat. But that is the end of the tale. The side came with a magnificent reputation, which was not dimmed by the defeatist attitude of the majority of critics in England when they landed; but among their new batsmen only Hassett showed any approach to the reputation which accompanied him, and among the new bowlers none did even that. Grimmett and Oldfield were sadly missed.

England, on the other hand, produced Hutton and Compton as completely new batsmen, and Wright as a bowler who seemed to many to drop from the blue; and all three made good in the test side from the start, and must be big factors for the future unless they suffer a total loss of form. In addition, there were several others who, mainly on account of the success of the above-named, did not have a chance to prove themselves as good, but of whom at least as high hopes were entertained before the season started. D. R. Wilcox, P. A. Gibb, N. W. D. Yardley, Wilkinson (the Lancashire spinner), J. G. H. Chalk, and Peter Smith are only a few of the names which come to one's mind. Although they were hovering round the fringe of the side all through, they had no chance, but their time will come.



Fox Photos]
THE SCOREBOARD AT THE OVAL WHEN HUTTON BROKE THE RECORD DURING THE TEST MATCH *v.* AUSTRALIA, AUG. 23, 1938

Edrich alone did not make good this time, but he is such a good player that it would be impossible to lose faith in him in spite of the fact that he played without success in every match. The fact that, in spite of failure, he was persevered with is a real indication of two things. First, it meant that the selectors felt that they had enough in hand over their opponents to be able to continue to play a batsman of whom they felt sure that, although he had not done so, he would succeed; and secondly, it meant that they had realized one very important fact: Edrich was out six times out of eight to the same ball from the same bowler, so that his lack of success appeared to be far more due to his inability to play that particular ball than to any real lack of ability.

Such reflections must lead us to view the events of the summer of 1938, from the English point of view, with considerable satisfaction. There would not appear to have been any season within memory which has provided so much new material and proved such a large percentage of it. English cricket would appear to be well on the up grade, and approaching the crest of the wave.

As is natural, county cricket suffered a lot of interference, due not only to the tests, each of which affected two county games, but also to the trial match held at Lords. Yorkshire, in again winning the championship, proved not only their ability but their consistency and their reserve power; for no county side lost more players to the call of country. Hutton, Verity, Smailes, Gibb, Wood, and Leyland were all called on various occasions, and when they played, more than pulled their weight in the test team.

Surrey were another side to improve on their form of recent years, and they did it mainly by virtue of the all-round ability of the individual players who composed their side, and the manner in which they were held together in spite of the absence, on so very many occasions, of their official captain.

Essex started the season very badly, but finished well, as one would expect them to do with four such bowlers at their disposal as J. W. A. Stevenson, K. Farnes, Nichols, and Peter Smith, all of whom played with success in the Gentlemen *v.* Players match at Lords.

On the whole the county season was a good one, to which the persistent challenge of Middlesex for the championship added a tremendous lot of interest, although that effort again failed. Middlesex were not the only county to produce new blood successfully, for most sides seemed to emulate the deeds of the test side in the way of fresh talent.

The other historic matches at Lords resulted in a win for the Gentlemen over the Players by 133 runs, and drawn games between Oxford and Cambridge, and Eton and Harrow.

FINAL POSITIONS IN THE COUNTY CHAMPIONSHIP

(*1937 position shown in parenthesis*)

—	P	W.	L	D.	First Innings Lead in Match Lost	First Innings Lead in Match Drawn	Pts.	Average
Points awarded	—	12	—	—	4	4		
1. Yorkshire (1)	28	20	2	6	0	4	256	9 14
2 Middlesex (2)	22	15	5	2	0	1	184	8 36
3 Surrey (8)	25	12	6	7	2	5	172	6·88
4. Lancashire (9)	28	14	6	8	0	6	192	6 85
5 Derbyshire (3)	25	11	8	6	3	4	160	6·40
6. Essex (6)	26	12	11	3	3	2	164	6·30
7. Somerset (13)	25	10	9	6	1	5	144	5·76
8 Sussex (5)	29	11	9	9	3	3	156	5 37
9. Kent (12)	27	8	14	5	2	4	120	4·44
10. Gloucestershire (4)	28	8	13	7	2	4	122*	4 35
11 Worcestershire (15)	30	9	11	10	2	3	128	4·26
12. Nottinghamshire (10)	25	7	10	8	2	3	106*	4·24
13. Warwickshire (11)	22	7	7	8	0	2	92	4·18
14. Hampshire (14)	30	9	16	5	4	0	124	4 13
15. Leicestershire (16)	22	4	9	9	1	7	80	3·63
16. Glamorgan (7)	22	5	9	8	1	3	76	3 45
17. Northants (17)	24	0	17	7	3	1	16	0·66

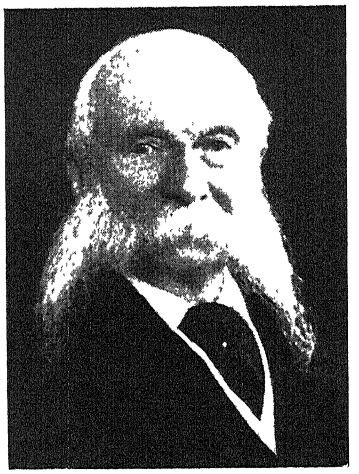
* Including two points for first innings tie in match lost. There were nineteen matches with no result at all

As is natural when there is a test series between England and Australia, this seems to fill the cricket eye almost completely, and the tremendous publicity which is given to such matches, all over the cricket world, seems rather to obscure what is taking place in other fields, quite apart from the fact that Africa and New Zealand play their cricket during the English winter. News of the doings abroad is therefore rather sparse in test summers in England, though there has been sufficiently encouraging news of the game in South Africa to add rather more than the usual amount of interest to the visit of Hammond's side to that country in the winter of 1938–39.

The game flourishes in all corners of the world, as it should do, and at the same time, it progresses, as must all good things. To many it is a moot point whether or not the growing volume of publicity which envelops the game is for its benefit, but apart from the fact that we must all admit its growth, that is not a fit subject for discussion in this place. New life must enter the sinews of the game as new blood is successfully introduced to it; and in that respect England at least is taking a new lease of life, and, knowing them as we do, the Australians will not be very far behind. The 1938 season must now rank as one of the most successful in post-war cricket, and, as a result, the prospects of the game for the future must be brighter than they have been for some years. (P. G. H. F.)

CRICHTON-BROWNE, SIR JAMES, British physician, was born in Edinburgh on Nov. 29, 1840, and died at Dumfries on Jan. 31, 1938. He was educated at Trinity College, Glenalmond, and at Edinburgh University and Paris. Specializing in the mental aspects of medicine,

he served successively as assistant, and later as superintendent, at different asylums, and earned himself a national reputation as medical superintendent of the West Riding Asylum at Wakefield from 1866 to 1875. From 1875 to 1922 he was Lord Chancellor's Visitor in Lunacy. Throughout his career he gave vigorous expression to his opinion on matters of public health, and his opinion was held in general respect. He was knighted in 1886. He was the author of: *Victorian Jottings*, 1926; *What the Doctor Thought*, 1930, and several other volumes, as well as pamphlets, including one on *What We Owe to Alcohol*, 1918.



Vandyk]
SIR JAMES CRICHTON-BROWNE

CRIME. Under this heading are reviewed the criminal statistics of Great Britain and the United States of America during 1938.

Great Britain. Criminal offences in Great Britain are divided into two main categories—indictable (larceny, breaking and entering, violence against the person, etc.) and non-indictable (traffic offences, drunkenness, breach of by-laws, failure to take out licences, etc).

The latest statistics show that there has been an increase in every type of non-indictable offence except assault and Education Act transgressions. Traffic offences, which furnish 59 per cent of the total number of offenders of all types, were thirteen per cent higher in 1936 (the latest year for which complete figures are available) than in 1935. At 488,297 they stand at a record total; of these, 57,555 were cases of obstruction. Motorists formed 79·8 per cent and cyclists sixteen per cent of all traffic cases. Drunkenness, too, is on the increase, there being 46,757 cases as compared with 44,525 in the previous year, an increase of five per cent. The total is still, however, substantially below the record figure of 53,080 cases in 1930. Non-indictable assaults, on the other hand, show a decrease of 2,658 in relation to the 1931 total. Offences by prostitutes have risen from 1,260 in 1931 to 3,343, the trend being steadily upwards every year. Education Act offences fell in the same period from 7,318 to 4,988.

Turning to indictable offences, convictions in respect of those committed by persons under seventeen years of age (*see* JUVENILE DELINQUENCY) have risen from 20,540 in 1934 to 27,126, while persons over seventeen found guilty show only a slight increase at 45,659 in comparison with 45,196 in 1934. Of the 72,785 offenders listed in the most recent statistics, 51 per cent were aged 21 and over, twelve per cent were between seventeen and 21, and 37 per cent were under seventeen. Three hundred and eighty-three men and boys out of every 100,000 in the population were guilty of indictable offences, the corresponding figure for women and girls being 49; in 1929 these figures were 299 and forty so that there is a substantial increase in both groups. Of the 45,659 persons over seventeen found guilty, 74 per cent were convicted for larceny, ten per cent for receiving, false pretences, and fraud, six per cent for breaking and entering, four per cent for miscellaneous offences, three per cent for sexual offences, and three per cent for offences against the person. The most common forms of larceny are thefts from shops and stalls, "larceny by a servant", thefts of pedal cycles, thefts from unattended vehicles, and thefts from automatic machines and meters. Of the "breaking and entering" offences nearly half related to shop-breaking. In 79·4 per cent of the cases of theft (larceny, and breaking and entering) known to the police, the value of the property stolen was under £5; in 19·3 per cent it was between £5 and £100; while in 1·3 per cent it was over £100. Of the "receiving, frauds, and false pretences" group, obtaining by false pretences was the most common offence, followed by receiving stolen goods. In 103 out of the 232 cases of persons between seventeen and 21 years of age concerned in sexual offences, the charge was indecent assault; the corresponding figure for persons over 21 was 524 out of 1,267; 34 per cent of those over 21 in this category were under thirty years of age.

Nine hundred and fifty-one of the 1,162 persons charged with violence against the person (wounding, manslaughter, infanticide, murder, etc.) were found guilty of "wounding", and of these 728 were dealt with summarily; forty per cent of the total aged 21 and over were under thirty. In 33 out of the 99 cases of murder known to the police, the murderer or suspect committed suicide Out of 64 arrests, 23 persons were convicted and sentenced to death. Of these, eight were executed, in thirteen cases the sentence was commuted to penal servitude, and two convicted murderers were certified as insane. In five cases of known murder the murderer escaped.

The total number of persons committing suicide has increased from 3,474 in 1911 to 5,007 (3,408 males and 1,599 females); this high figure (a drop, however, of 216 on the previous year's) is thought to be largely due to the great increase in the number of persons of 45 and over in the population, amounting now to sixty per cent. On the per million of the population in various age groups basis, suicides of men under 55 have actually decreased, those of men over 55 showing a slight rise; while among women, whereas the figure for those under 25 is much lower than it was in 1911, both the under- and over-45 groups show increases.

A notable tendency of recent years has been the decrease in the number of persons sent to prison for debt; for non-payment of fines, for example, the decrease in convictions amounts to 23 per cent in comparison to 1935; for failure to pay wife maintenance orders committals decreased by 19·5 per cent, for affiliation orders by 33·8 per cent, and for rates 33·4 per cent. (V. B.)

United States. For the nine-year period beginning with 1930, there has been a gradual decline in all classes of reportable crimes, except for rape and larceny, which have increased perceptibly. The year 1936 was notable for the smallest number of "crimes known to the police" thus far recorded. In 1937 there was a slight upturn for practically all classes, but in 1938 the totals turned downward again or remained close to the 1937 levels. Thus the general trend continues downward.

The New England and Middle Atlantic States have the lowest urban crime rates, with the South Atlantic, East South Central and Pacific Coast States reaching the highest levels. In America the larger the city, the larger is the ratio of crime to population.

For the first nine months of 1938, 55·7 per cent of the total of all reportable crimes were larcenies. Other major categories included burglaries, 23·8 per cent; motor-

car thefts, 12·8 per cent, and robberies, 4·0 per cent All of these offences, representing 95·6 per cent of the total, involved unlawful gain as a motive The rather small residue of 4·4 per cent represented attacks upon persons, *i.e.* homicides, rapes, and aggravated assaults

The following comparison of 1937 with 1938 includes 1,750 cities, towns, and villages for 1937, and 1,894 such communities for 1938:

Offences known to the Police, January–September inclusive, 1937–38

Rate per 100,000 of population

Offence	1937	1938
Murder and non-negligent manslaughter	4·6	3·9
Manslaughter by negligence	4·1	3·1
Rape	6·5	6·3
Robbery	40·0	42·4
Aggravated assault	35·5	32·8
Burglary breaking or entering	237·4	243·0
Larceny theft	559·9	584·9
Motor theft	157·9	134·8

The prominent position occupied by larcenies in the foregoing summary invites further analysis Larcenies involving the theft of property valued at more than $50 represented only 13 per cent of the larceny total; those from $5.00 to $50 were 65 per cent, and thefts ranging downward from $5.00 constituted the remaining 22 per cent.

Residences were the object of attack in approximately half the burglaries, 35 per cent of them being entered in the daytime. Of all burglaries, only 21 per cent were committed during the daylight hours.

Of the crimes of robbery, 56·5 per cent were committed on the highway or elsewhere in the open, with commercial establishments standing second at 27·2 per cent. Banks were the objective in only 12 instances out of a total of 10,666 robberies reported.

No figures similar to those given above are available for extensive rural areas, but it is well established that, generally speaking, rural crime rates are lower than those for more densely populated areas, though crimes against the person are relatively more frequent. The relative standings for each class of reportable offence, in 1937, are given below in terms of average groups of 100 urban and 100 rural crimes:

Offences against Property	Per cent		Offences against the Person	Per cent	
	Urban	Rural		Urban	Rural
Larceny	53·9	46·8	Aggravated assault	3·2	5·6
Burglary	22·5	28·2	Rape	·6	2·6
Motor theft	14·9	9·7	Murder	·4	1·5
Robbery	4·1	4·1	Manslaughter	·4	1·5

Similar urban-rural relationships have repeatedly been observed by foreign commentators upon crime in Europe. The relative preponderance of rural murders, manslaughters, and rapes, as shown in the foregoing table, is especially pronounced. (*See* also FEDERAL BUREAU OF INVESTIGATION; JUVENILE DELINQUENCY; POLICE.)

BIBLIOGRAPHY. *Uniform Crime Reports*, 1937 and 1938, Fed. Bureau of Investigation, Washington; *Prisoners in State and Federal Prisons and Reformatories*, 1936, and *Mortality Statistics*, 1935, U.S. Bureau of the Census, 1938.

CROQUET. The open championship of 1938 fell to Mr. D. J. V. Hamilton-Miller; Mr. C F. Colman, whose attractive, quick style was the outstanding feature of the season, won both the men's championship and the President's Cup; Miss D D. Steel won the women's championship for the seventh time in succession and the fourteenth time in all. The open doubles championship went to Mr. C. F Colman and Mrs R. C J. Beaton, and the mixed doubles to Lt.-Col W B du Pre and Mrs. R. C. J. Beaton.

The Roehampton Challenge Cup was won by Dr. Edgar Whitaker—the winner of the open championship in 1911—who this year made a welcome return to the game Mrs. T. H. F. Clarkson won the Ladies' Field Cup, the Men's Peel Memorial went to Mr. Leslie Walton and the Women's to Mrs. S Stannard, and the Gilbey Cup was won by Mrs. J.V Harris. Miss M E Norman won the All England Handicap; Hampshire succeeded Middlesex as leading county, and Roehampton was the winner in the inter-club competitions.

The appointment by the Croquet Association of an authorized instructor met with much success, and in various towns public courts have been laid down by the local authorities. Important proposals regarding the width of the hoops and the dimensions of the court are under consideration.

CUBA. A republic occupying the largest of the West Indian islands; language, Spanish; capital, Havana; president, Federico Laredo Bru, area, 41,634 sq. miles without small neighbouring islands. Population (census, 1931) 3,962,344; (estimate, 1936) 4,108,650, including about 68 per cent whites. The chief cities (with 1930 population) are: Havana, 542,522; Santiago, 103,525; Cienfuegos, 87,699. The United States has a leased naval base at Guantánamo.

Colonel Fulgencio Batista, Chief of Staff of the constitutional army, remained during 1938 the dominating figure in Cuban politics. On March 4 his strength was manifested in the congressional elections for 81 representatives and one senator, in which the 450 candidates nominated by seven parties were all his fervent supporters. After a brief cabinet crisis in August, President Laredo Bru's cabinet resigned so that new appointments might be made along "non-political" lines.

On February 14 Congress passed a measure authorizing an $80,000,000 bond issue with which to retire the outstanding public works bonds. The effort of the Cuban government to settle its old debts was preliminary to the establishment of its own bank of issue and an independent currency. The existing currency is in dollar certificates against silver, printed in the United States and on parity with the United States dollar, but because of its rigid relationship to the dollar it lacks the standing of an independent currency.

In March, the first distribution of State lands to tenant farmers was made, with fifty acres each, to 250 indigent farmers. Colonel Batista personally delivered the deeds. Recipients of the farm lands are required to occupy and cultivate them for six years. The farms cannot be encumbered or sold and are transferable only by inheritance. To increase production of corn and rice, 102,000 lb. and 122,400 lb. respectively of seed were distributed by the Bureau of Agriculture for planting.

Evidence of some unrest was shown in March, when an alleged conspiracy against the government was exposed. Four men were killed when soldiers surprised a meeting of plotters; later, seven persons received three-year prison terms each for conspiracy.

In April, upon the opening of Congress, Colonel Batista began actively to urge the enactment of legislation called for by his Three-Year Plan, but on May 4 he suddenly announced suspension of the much-publicized Plan until a constituent assembly, to provide the nation with a new constitution, could be held. In a dramatic and unexpected statement he declared he was sacrificing his plans for social and economic reconstruction in the face of the general demand of all parties for a free and sovereign constituent assembly This sudden withdrawal of the Three-Year Plan was considered a master political manœuvre in that it threw all responsibility for the halting of the reforms on the shoulders of the opposition.

Another of the important events of 1938 was the launching of a $6,000,000 public works programme to aid the unemployed, the funds to be obtained through a ten per cent reduction in government expenditures. The plan included repatriation of an estimated 50,000 West Indian labourers and tightening of immigration legislation, wage regulation, and further control of relations between employers and workers.

A thoroughly revised penal code ("Code of Social Defence"), enacted in 1936, came into effect in 1938. Its intent is to "defend society" rather than to punish the individual criminal. Among its provisions is one for levying fines on a basis of the individual offender's capacity to pay.

Education. During the 1937–38 school year 4,115 schoolhouses, with more than 8,300 classrooms, were used for primary schools. The total enrolment was 423,420. It was estimated, however, that 4,000 more classrooms were needed. Reorganization of the 211-year-old University of Havana continued during 1938.

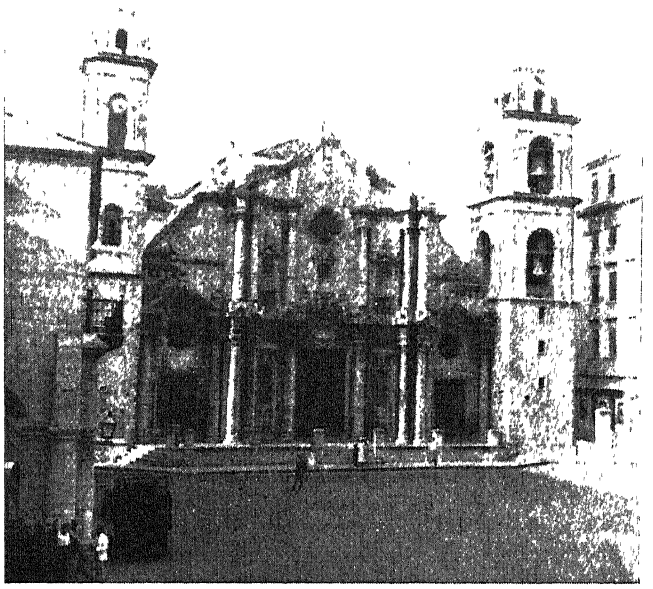
Defence. The Cuban army numbers 1,916 men and officers, the rural guard 600. The navy includes sixteen ships. Both army and navy have air services.

Finances and Banking. The monetary unit is the peso, equivalent to the United States dollar. The 1938–39 budget called originally for $78,513,778·60, but was cut by $9,700,000 in Oct. 1938 because of reduced government income.

Trade and Communication. Cuba is on the main route of the Pan-American Airways, and enjoys excellent external as well as internal air transport facilities. There are 3,850 miles of railways and a network of 2,500 miles of roads, dominated by the 706-mile Central Highway, which runs the length of the island from Havana to Santiago. Telephone and telegraph facilities (10,939 miles) are superior to those of any other Hispanic American republic. There are 54 radio broadcasting stations.

In 1937 imports totalled $129,572,117, while exports were $186,071,036, representing increases of 25·54 per cent and 20·16 per cent over 1936. Approximately 80 per cent of exports went to the United States, while 67 per cent of imports came from that country. Great Britain is second in Cuban trade, with 15 per cent of exports and 5 per cent of imports in 1937. Exports and imports in the first eight months of 1938 declined 27 per cent and 13 per cent respectively, but most of the loss was regained before the end of the year. During 1938 trade agreements were made with Mexico, Great Britain, and Italy.

The principal export commodity is sugar, which comprised 70 per cent of the total in 1937. In 1938 sugar exports increased to 2,746,050 long tons (2,490,725 tons in 1937). Shipments to the United States were 1,663,554 tons, a decrease of 172,181 tons. Sugar exports to Europe increased 157,506 tons over 1937. Tobacco is second to



A. Costa]
THE SPANISH BAROQUE CATHEDRAL OF HAVANA, CUBA

sugar as an export item. Imports are foodstuffs, textiles, machinery, and other manufactured articles.

Agriculture and Mineral Production. Owing to world over-production, sugar production is restricted by international agreement. In 1937 slightly over 3,000,000 long tons was produced; for 1938 the quota was set at 2,950,000 tons, of which all but 150,000 tons was for export. Coffee is also increasing in importance, with 152,460 acres planted, and an estimated production of over 71,000,000 lb. To permit Cuban coffee to compete in foreign markets on equal terms with that of other countries an export subsidy is given.

Encouragement to gold mining was given on Oct. 20 with the abolition of the previous export duty of 15 per cent. Special legislation for the development of potential petroleum resources was enacted in 1938, resulting in considerable explorative efforts, but as yet no development of consequence. Approximately one-sixth of the area of the country is forest. A valuable sponge industry centres at Batabano. (L. W. Be.)

CURAÇAO. Dutch West Indian island in the Leeward group off the coast of Venezuela, with which are included the nearby islands of Aruba and Bonaire and the small Windward islands of Saba, St. Eustatius, and St. Martin. Capital: Willemstad (pop. 27,231). The area of Curaçao is 212 sq. miles, of the entire colony 436 sq. miles. Population (1936 census) 90,870, with 58,233 on Curaçao, and 21,638 on Aruba. The colony is administered by an appointed governor and partially elected council. In 1936, the latest year for which statistics are available, imports aggregated 197,012,376 florins in value (Venezuela 75·6 per cent; the United States 8·5 per cent; Colombia 5·7 per cent; and the Netherlands 2·1 per cent). Crude oil (principally from Venezuela, with some from Colombia) represented 77·6 per cent. Exports (1936) aggregated 201,512,618 florins, of which petroleum and its derivatives represented over 99¼ per cent, chiefly to Great Britain (31·3 per cent), the Netherlands (11·2 per cent), and the United States (20·2 per cent), with 8,165,717 florins value in oil products to ships. The colony's chief industry is oil-refining. It is also important as a producer of phosphate, exporting

600,818 florins value in 1936 The monetary unit is the Dutch florin (8·70 to the pound sterling approx). The entire colony (1936) had 49 schools, mostly parochial, with total enrolment of 12,474 The population is over 75 per cent Roman Catholic. (L. W BE)

CURLING: *see* WINTER SPORTS

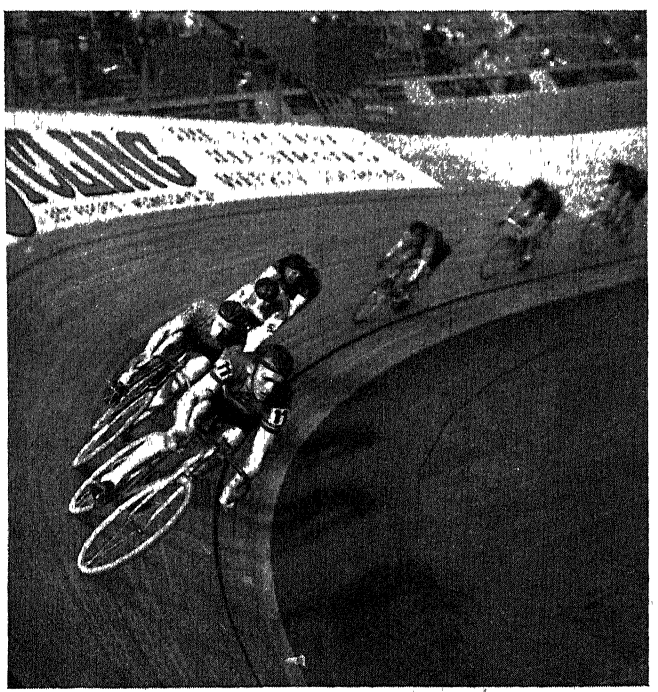
CURRENCY: *see* EXCHANGE RATES

CYCLING. In England and Wales the popularity of cycling was well maintained. It is estimated that there are 10 million cycles on the roads. There are approximately 2,000 clubs, and in 1938, its diamond jubilee year, membership of the National Cyclists' Union for the first time exceeded 60,000.

The outstanding event of the year was the appointment of a National Organizer under the Physical Training and Recreation Act From some hundreds of applications the choice fell on Mr. J. E. Holdsworth, an ex-racing man who had become an official of the N C.U. , he commenced his duties on Nov. 1, and the appointment is, in the first instance, to March 31, 1940. During the year the Traffic Advisory Council published its report dealing with the use of cycle paths, rear lights, riding more than two abreast, etc. ; no bill embodying the recommendations made has yet been presented.

On the racing side, the National Sprint championship was won by D. S. Horn, of the Polytechnic C.C. W. W. Maxfield (Kentish Wheelers) repeated his 1937 win in the 25 miles, but in the fifty-mile human-paced R. W. Shand (Southern Elite) sprang a surprise by beating the record holder, E. V. Mills. The Team Pursuit championship was won by Belle Vue, who, in the final of the London competition, established a British record for the distance. Organized for the first time, a National Massed Start championship, held at Donington motor track, was won by J. Holmes (Yorkshire Road Club)

In the world championships, Scherens was at last beaten in the professional sprint, the new holder being Van Vliet of Holland. The other world champions for the year are : amateur sprint, Van de Vijver (Holland) ; amateur road, Knecht (Switzerland) ; professional motor-paced, Metze (Germany). The six-day International, held at Wembley in May, was won by the Belgian team, Buysse and Billiet, their tenth win in events of this kind At the professional meeting (Herne Hill, September), Karel Kaers (Belgium), world's professional road champion, beat Harry Hill of Sheffield in the 1,000 metres (standing start), the ten-mile pursuit, and the five-mile motor-paced. (L H. D.)



Fox Photos]
THE SIX-DAY CYCLE RACE AT WEMBLEY, MAY 1938

In the United States a new record for the Pikes Peak, Colo., bicycle run was established by J. A. Armado. Three East Indians completed a bicycle trip half way round the world in five years, a total of 35,000 miles made for good will and education, arriving in New York in Sept. 1938

CYPRUS. The year 1938 was a relatively prosperous one for Cyprus. Crops were fair and prices for some improved. The mining companies continued to be an important economic factor by reason of the increased purchasing power which the wages they distributed gave the people.

Towards the end of the year labour disputes, mainly concerned with the question of wages and conditions of working, broke out, and trade unions made their appearance in connexion with some of the local industries.

The main legislative measure was the Rural Debt Bill, which aims at relieving the farmer in respect of his indebtedness, and will be enacted after the government has considered the criticisms of the local financial authorities. The rural debt is estimated at about £2 millions. The Bill proposes to examine the position of each debtor, fix what he is capable of paying, with a reduction of thirty per cent in most cases but unlimited in others, and then spread the net amount over a period of fifteen years.

Cyprus's great need of water was taken in hand during 1938. Schemes costing over £200,000 have been submitted to Whitehall. Considerable areas hitherto scantily supplied with water will receive additional supplies, and their productivity be increased.

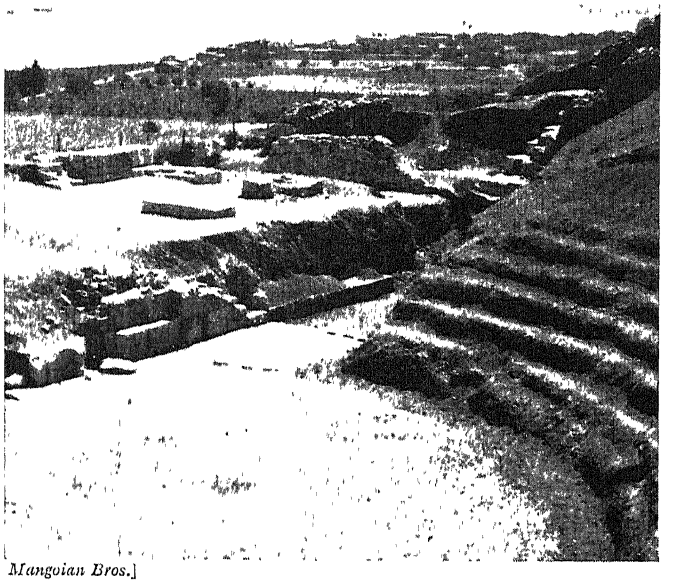
Much progress has been made at Fassouri, near Limassol, by Jewish agriculturists in the development of hitherto undeveloped land, which has been converted into prosperous fruit and vegetable gardens. Jewish immigration is welcomed so long as it is not of the labour type. An artificial-tooth factory and a-button factory have been started near Larnaca in order to profit by the Ottawa Agreements and compete in the English market with Italian and other foreign productions. (A. MN.)

Area and Population :
Area 3,572 sq. miles.
Population (est. Dec. 31, 1937), 372,810.
Governor. Sir H. R. Palmer, K C.M.G.
Language. Greek.
Religion. Orthodox Greek Christians ; *c.* 64,000 Mohammedans.

Production 1937 :

Wheat	60,200 metric tons
Barley	43,800 ,, ,,
Olive Oil	2,700 ,, ,,
Potatoes	30,900 ,, ,,
Wine	93,000 hectolitres
Asbestos	11,300 metric tons
Copper (1936)	16,600 ,, ,,
Pyrites (1936)	267,000 ,, ,,

Overseas Trade, 1937 :
Imports . . £2,219,463
Exports, domestic . £2,096,326 ; Re-exports £85,331
Communications :
Roads . . 664¾ miles suitable for motor traffic
Railways . . 71 miles open to traffic.



Mangoian Bros.]

AMPHITHEATRE, XERO, CYPRUS

Finance, 1938 :
Revenue, £870,378 ; Expenditure, £917,230.
Public Debt (Dec. 31, 1937), £615,000.
Currency : £1 = 180 piastres.

Education, 1937 :
Elementary schools : Christian 499 , Moslem 211 ; scholars : Christian 37,525 ; Moslem 7,424 , Secondary schools 13, scholars 1,699.

CYRENAICA : *see* LIBYA.

CYRIL, THE GRAND DUKE (Kirill Vladimirovich Romanov), claimant to the Russian throne, was born at Tsarskoe Selo on Sept. 30, 1876, and died in Neuilly, Paris, on Oct. 12, 1938. He was a first cousin of the Tsar Nicholas II, his father, the Grand Duke Vladimir, being a son of Alexander II. Through the marriage of his sister to the late Prince Nicholas of Greece, the Grand Duke was uncle to the Duchess of Kent. He himself married in 1905 his first cousin, the Princess Victoria (*d.* 1936), daughter of the Duke of Edinburgh and sister of the late Queen Marie of Rumania, whose former marriage with the Grand Duke of Hesse-Darmstadt had been dissolved ; and, as a result, he was deprived by the Tsar of all his honours, and lived in exile until 1910. His children are the Grand Duke Vladimir (*b.* 1917), who succeeds him, Marie, Princess of Leiningen, and Kira, Princess Louis Ferdinand of Prussia. The Grand Duke Cyril served in the Russo-Japanese war, being on the bridge when the battleship " Petropavlovsk " was mined, and commanded a regiment of marines during the World War. After the 1917 revolution he at first offered his services to the Provisional Government, but later fled via Finland to France.

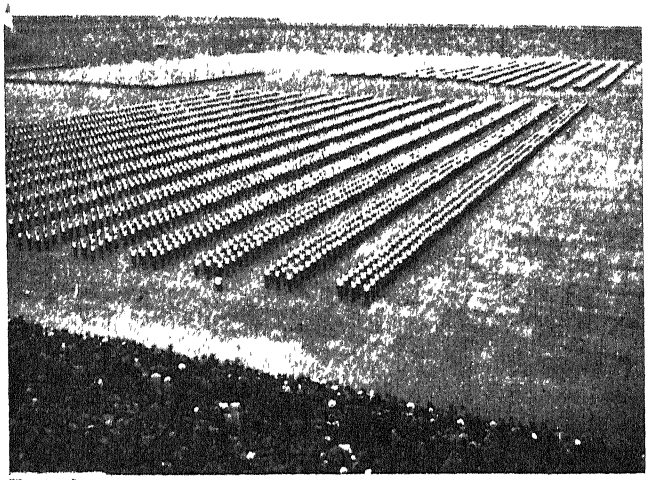
CZECH LITERATURE. Otokar Fischer died on March 12, and Karel Čapek on Christmas Day, 1938. Among collections of poetry Fischer's *Last Poems*, J. Hora's *Home*, and several volumes inspired by the September crisis (Kolman-Cassius, *The Iron Shirt* ; F. Halas, *Torso of Hope* ; J. Seifert's *Put out the lights* ; V. Holan's *September 1938*) attracted most attention. The outstanding novels of the year were : Vl. Vančura's *Horvat Family*, M. Majerová's *Miners' Ballad*, J Durych's *Carnival 1611*, J. Hora's *Breath on Glass*, B. Klička's *Vineyard of the Lord*, J. Karásek's *Paradise Lost*, and E. Hostovský's *Three Old Men* (short stories). Among plays, K. Čapek's *Mother* is most characteristic of the mood of the nation before the crisis. The magnificent volume by A. Matějček on *Czech Gothic Painting*, J. Vilíkovský's *Czech Fourteenth-century Prose*, J. Vašica's *Czech Baroque Literature*, and a volume of studies on *Mácha* testify to undiminished interest in the past of the nation, while excellent translations by E. Saudek of *A Midsummer Night's Dream* and *Twelfth Night* and by A. Skoumal of K Mansfield's *Bliss* show interest in English literature unabated. J Čapek's *Art of Primitive Nations* should also be mentioned The effects of the political upheaval on literature are not yet visible (R W.)

See an article " Twenty Years of Czech Literature " (1918–38), by R Wellek, in the Jan 1939 number of the *Slavonic Review*.

CZECHOSLOVAKIA. The year opened quietly for Czechoslovakia. The Sudetendeutsche Party (S.D.P.) was weakened by scandals and dissensions, and an oppositional movement within it was actually started under the name of " German Socialists ". But Herr Hitler's speech of Feb. 20, referring to the ten million Germans living across the German frontier (*i.e* in Austria and Czechoslovakia) foreboded coming storms President Beneš on March 5 warmly defended Czechoslovakia's treatment of her minorities, although denying that a federal solution was possible. But the absorption of Austria (*q v.*) by Germany at once aggravated the situation. The S.D.P. declared (March 16) that they would co-operate if the government remodelled both the internal structure and the foreign policy of the country on the Swiss model. Three of the " Activist " parties—the German Agrarians, Small Traders, and Clericals—then left the government coalition and joined Henlein ; of the German parties, only the Social Democrats still supported the government, in so far as questions of sovereignty and defence were concerned. On March 24 the Slovak Clericals decided to press for autonomy. On March 28 the government announced that it would consolidate all its minority provisions into a new " Minority Statute ", based on the Constitution, but the S.D.P. rejected this as insufficient. Not only the Slovak Clericals (from whom, however, the Slovak Centralists dissented) demanded autonomy, but the Magyar and Polish groups also (March 29). On April 23 Henlein, speaking at Carlsbad, put forward " eight points " : (1) full equality of status for Czechs and Germans ; (2) guarantee of this by recognition of corporate personality for the Germans ; (3) determination and legal recognition of the German areas within the State ; (4) full self-government for the German areas ; (5) legal protection for citizens living outside their own national areas ; (6) removal of and reparation for injustices inflicted since 1918 ; (7) German officials in German areas ; (8) liberty to profess German nationality and outlook. He added that, if Czechoslovakia wished for a reconciliation with Germany and the German people, she must revise her foreign policy. He declared the present situation intolerable.

The Czech coalition declared point 8 and the demand for modification of foreign policy unacceptable, but was willing to negotiate on modified terms. Henlein replied (May 1) that his demands were not a maximum.

The May Crisis. The government repeated that it would negotiate on the basis of the forthcoming Minorities Statute, which would contain liberal concessions. Meanwhile, however, the respective minority demands were



Keystone]
MASS DISPLAY IN THE SOKOL STADIUM, PRAGUE, MAY 1938

backed strongly by Poland and Germany, whose tone grew very threatening. Britain urged conciliation on both Prague and Berlin (May 7 and 12), but the situation developed very rapidly. Clashes occurred daily. On May 19 Henlein visited Herr Hitler. On the same day, reports were current in Prague that Germany had moved troops up to near the Czech frontier. In spite of official assurances from Germany that these were only routine movements, Czechoslovakia, on the night of May 20–21, called up and sent to the frontier some technical and other troops (an action which, according to Dr. Goebbels's later statement, decided Herr Hitler that the problem must be "liquidated"). France said that if necessary she would fulfil completely her obligations towards Czechoslovakia; Britain (May 23) urged restraint and a satisfactory settlement. In fact, the immediate crisis passed; but the German Press strongly criticized British "interference" in Central Europe, and declared that the rumours of a planned German attack were a legend. Britain should send observers to see for themselves the Czech "terror" and should "call Prague to order".

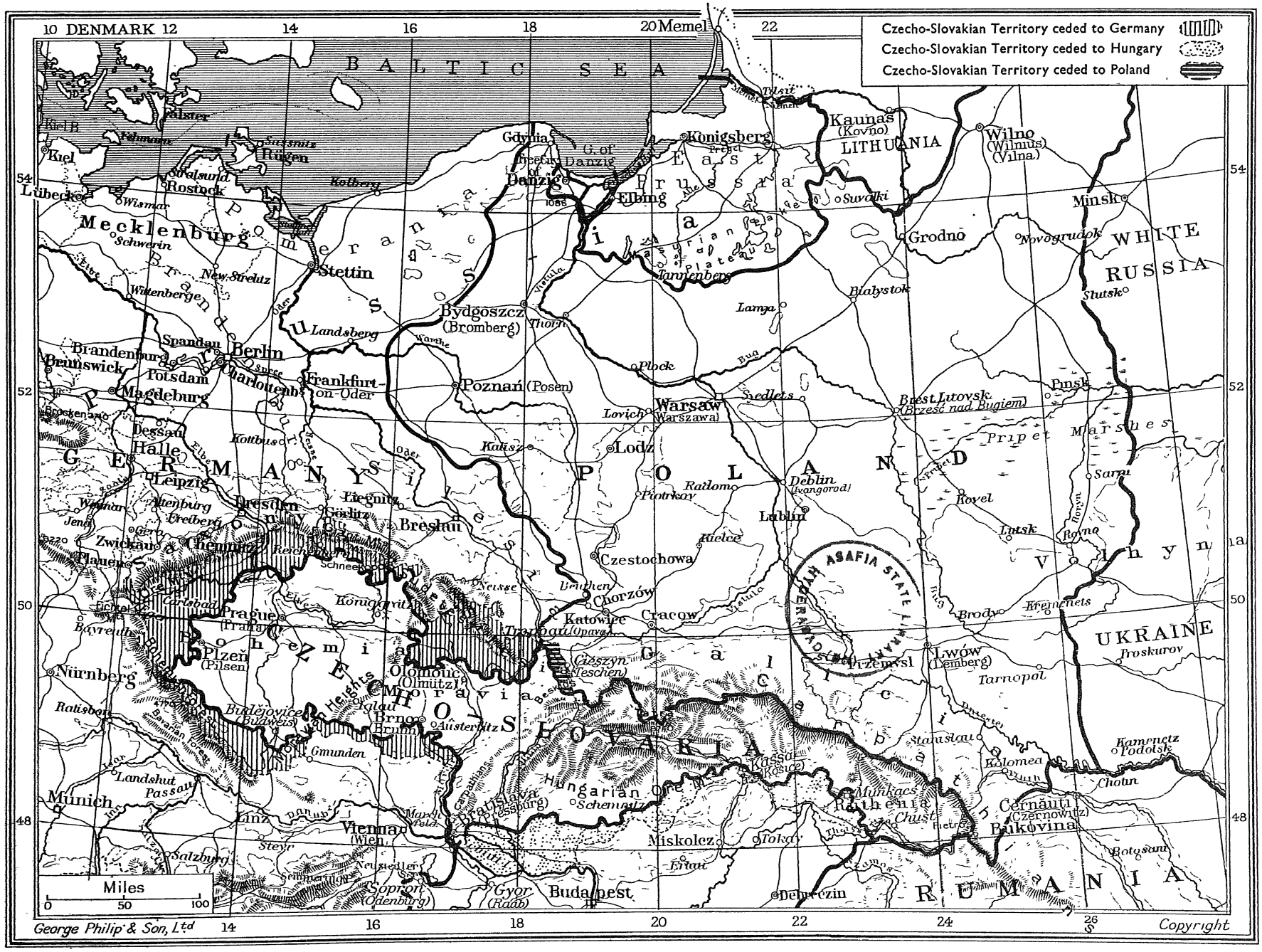
The local elections of May 22 and 29 and June 6 passed off quietly, the S.D.P. gaining large majorities in the German districts (according to their figures ninety per cent of German votes cast), while the Slovak autonomist parties lost considerably, although they continued and intensified their agitation, producing on June 4 a draft Autonomy Bill providing for the constitution of Slovakia as a complete autonomous unit within the Republic, with a Slovak diet competent in all local matters, and a Slovak administrative and supreme court. Slovak was to be the official language; Slovak soldiers only to serve in formations stationed in Slovakia. Foreign policy, defence, and finance were to remain with the central government.

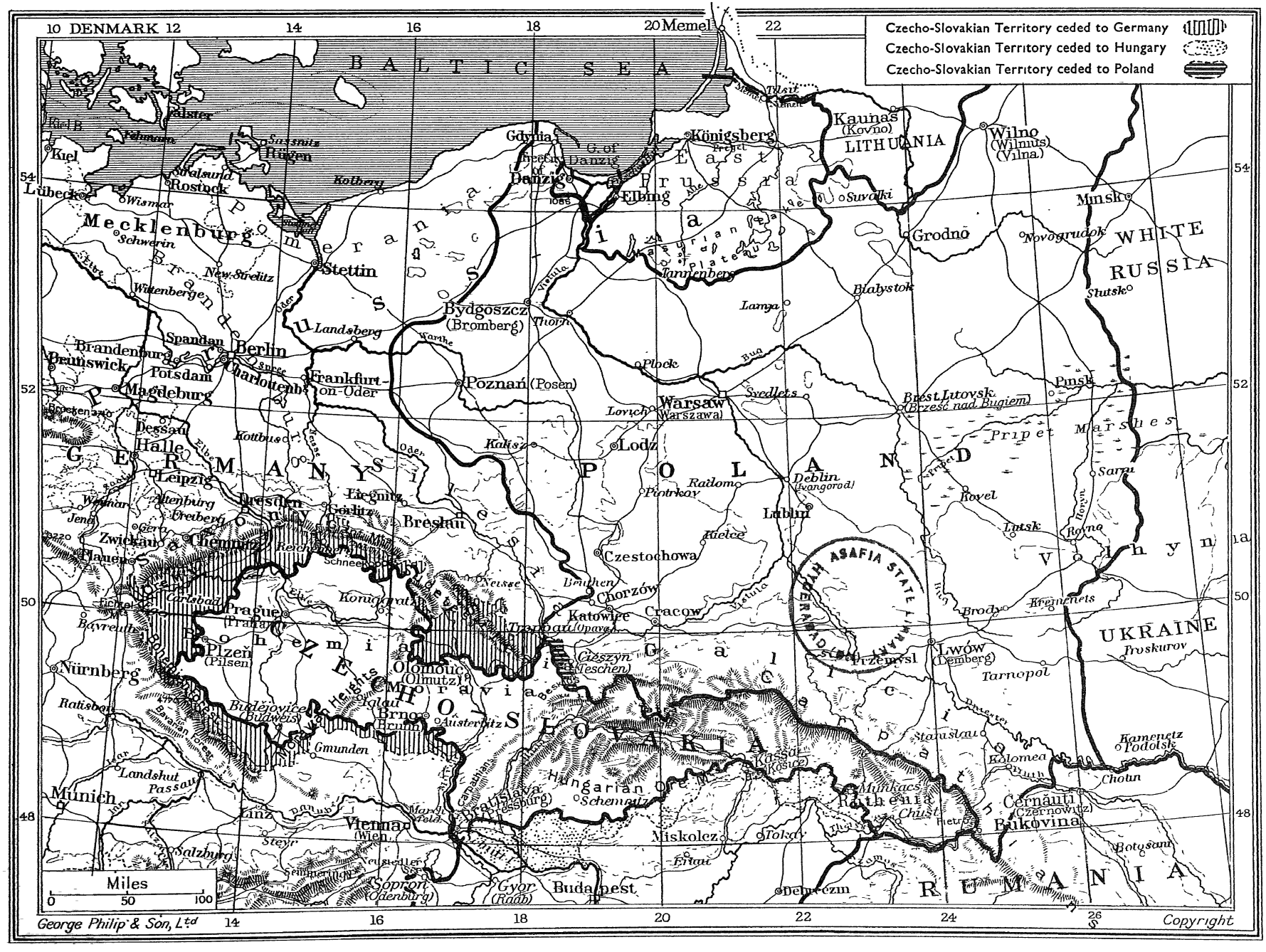
The government and its coalition continued work on the Statute, interviewing but not negotiating with the minority leaders. The Germans on July 19 published their demands, now fourteen in number. The basis was the Carlsbad Points, but the administrative details were more carefully elaborated, the whole forming a complete plan for the reorganization of the Republic into a federal unit, with complete equality for all nationalities. Defence and foreign affairs remained with the central government, in which each nationality was to be equally represented. Henlein declared (July 25) that nothing short of genuine autonomy was acceptable; he did not ask for annexation to the Reich, nor for a plebiscite. The government on July 28 handed parts of their proposals to the S.D.P., which at once rejected them as inadequate. This "First Plan" provided for four diets competent for local administration, in which each local nationality would have its own "curia". The Germans were to receive proportional representation in the central services, excluding the army. The central government was to retain control of foreign affairs, finance, and defence.

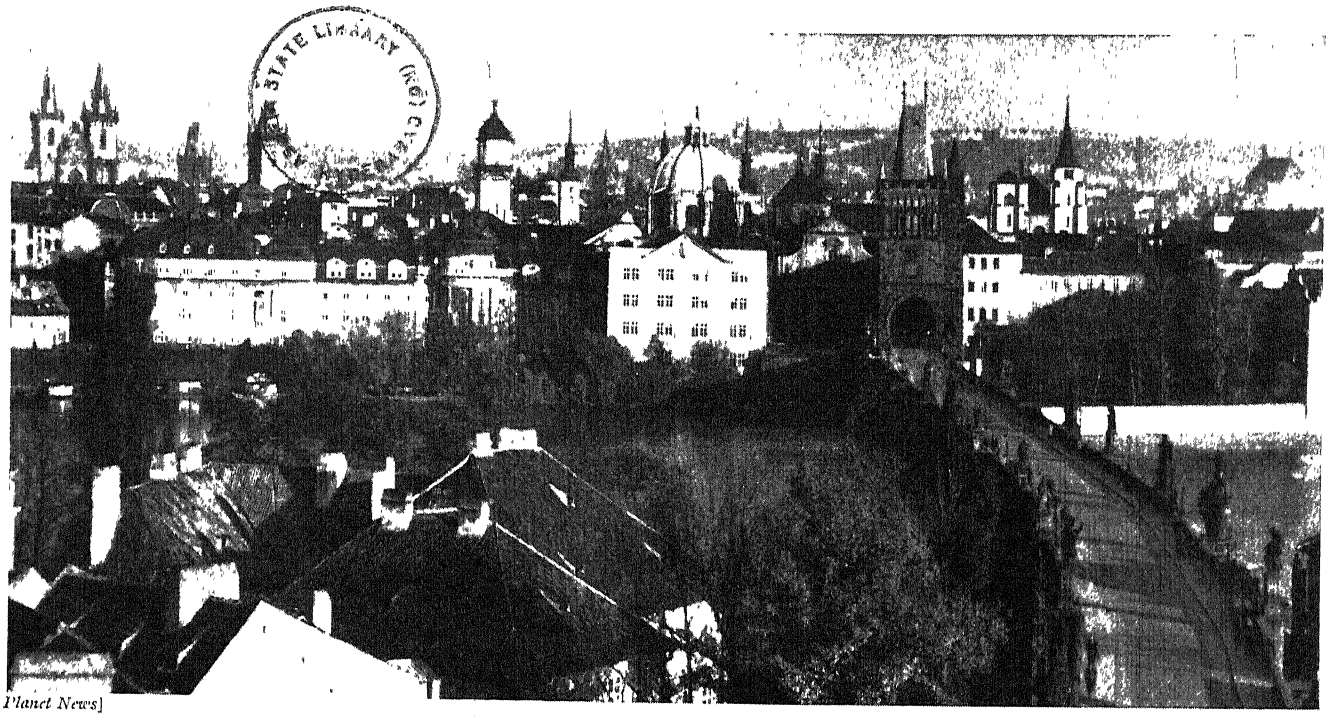
The Runciman Mission. On Aug. 3 Lord Runciman arrived in Prague, sent by the British government with a somewhat mistily defined status of mediator and adviser. He negotiated with the various groups throughout August — a month marked by recurring incidents and friction with Germany, and by the death of Father Hlinka, the Slovak autonomist leader (Aug. 16). M. Tiso succeeded him in the party. From Aug 17 there were direct negotiations between the government and the S.D.P. leaders, but the latter maintained intact their previous demands, rejecting a "Second" and "Third Plan" which progressed in the direction of cantonal autonomy.

Germany's attitude was now increasingly threatening, and the possibilities of intervention by her, through the enormous army engaged on manœuvres, and of a wider conflict, were obvious The German Press persistently alleged terrorism by Czechs of the German areas and the need for action. On Sept. 1 Henlein visited Herr Hitler at Berchtesgaden On Sept 5 a "Fourth Plan" offered proportional employment of officials of different nationalities in government and affiliated services: officials to be employed as far as possible in regions of their own nationality; special financial help for German districts; division of police into State and local; modification of language law on basis of equality; principle of national self-government in form of a system of cantons, delimited as far as possible on national lines, with protection for minorities within them, including the curia system, these to deal with all matters not concerning the unity of the State; registration and protection of nationalities; creation in all government departments of special sections to deal with questions of nationality. These provisions, where not requiring legislative action, to come into force without delay; where so requiring, the laws to be drafted with the collaboration of the various nationalities.

The S.D.P. agreed to continue negotiations and established contact with the Slovak, Magyar, Polish, and Ruthene groups; but incidents continued to increase. Herr Hitler at Nuremberg on Sept. 12 violently abused Czechoslovakia and President Beneš, and demanded self-determination for the Sudeten Germans. If necessary, Germany would help them. The next day the Czechoslovak government proclaimed martial law. The S.D.P. demanded that it be immediately rescinded and the State police withdrawn from the German districts. The government replied announcing strong measures. Henlein replied (Sept. 15) that Czechs and Germans could no longer live together in one State. The Germans wished to go "home to the Reich". Later he established a "Freikorps". The more moderate Germans appealed for further negotiation on the basis of the "Fourth Plan", but the Anglo-French proposals, following Mr. Chamberlain's visit to Berchtesgaden (Sept. 15) of Sept. 18 (presented to Prague Sept. 19), pressed on Prague complete cession to Germany of the mainly German areas,


Czecho-Slovakian Territory ceded to Germany
Czecho-Slovakian Territory ceded to Hungary
Czecho-Slovakian Territory ceded to Poland
BALTIC SEA
DENMARK
GERMANY
POLAND
CZECHO-SLOVAKIA
HUNGARY
RUMANIA
LITHUANIA
WHITE RUSSIA
UKRAINE
East Prussia
Pomerania
Silesia
Bohemia
Moravia
Galicia
Volhynia
Pripet Marshes
Carpathians
Hungarian Ore Mts.
Bohemian Heights
Baltic Plateau
Polish Plateau
Memel
Kaunas (Kovno)
Wilno (Wilnus) (Vilna)
Königsberg
Gdynia
G. of Danzig
Danzig
Elbing
Suwalki
Grodno
Minsk
Novogrudok
Slutsk
Pinsk
Kiel
Lübeck
Rostock
Stralsund
Rügen
Kolberg
Wismar
Mecklenburg
Schwerin
New Strelitz
Stettin
Bydgoszcz (Bromberg)
Thorn
Lamza
Bialystok
Brest Litovsk (Brześć nad Bugiem)
Brandenburg
Berlin
Spandau
Potsdam
Brunswick
Magdeburg
Frankfurt-on-Oder
Poznań (Posen)
Warsaw (Warszawa)
Lodz
Kalisz
Plock
Sedlets
Lovich
Deblin (Ivangorod)
Radom
Piotrkov
Lublin
Kielce
Pulawy
Royel
Lutsk
Rovno
Sarny
Halle
Leipzig
Dessau
Kottbus
Liegnitz
Breslau
Dresden
Görlitz
Zwickau
Chemnitz
Plauen
Weimar
Jena
Gera
Altenburg
Eisenach
Czestochowa
Chorzów
Katowice
Cracow
Brodv
Kremenets
Tarnopol
Prague (Praha)
Pilsen (Plzeň)
Nürnberg
Ratisbon
Olomouc (Olmütz)
Brno (Brünn)
Austerlitz
Gleiwitz (Gleschen)
Teschen
Lwów (Lemberg)
Przemysl
Stanislau
Kolomea
Kamenetz Podolsk
Munich
Landshut
Passau
Linz
Vienna (Wien)
Salzburg
Steyr
Neusiedler See
Sopron (Oedenburg)
Gyor (Raab)
Budapest
Miskolcz
Tokay
Kassa (Kosice)
Munkacs
Ruthenia
Chust
Cernauti (Czernowitz)
Bukovina
Debreczin
Erlau
Hatszeg
Botosani
Chotin
Troskurov
Jewish Autonomous State Birobidjan
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Salzburg
Passau
Landshut
Ratisbon
Bayreuth
Hof
Zwickau
Zittau
Görlitz
Liegnitz
Altenburg
Freiberg
Weimar
Jena
Gera
Aussig
Teplitz
Reichenberg
Trautenau (Upava)
Neisse
Brieg
Oppeln
Teschen (Cieszyn)
Hradec Kralove
Pardubice
Konigratz
Iglau
Gmunden
Steyr
Hungarian Ore Mts.
Schemnitz
Kassa (Kosice)
Miskolcz
Tokay
Eperies
Munkacs
Chust
Tarnopol
Lwów (Demberg)
Przemysl
Brody
Kremenets
Lutsk
Rovno
Royel
Sarny
Stanislau
Kolomea
Kamenetz Podolsk
Chotin
Czernowitz
Botosani
Debreczin
Buda pest
Gyor (Raab)
Sopron (Oedenburg)
Komarom
Esztergom
Pressburg (Bratislava)
Waag
Neutra
Vah
Hron
Ipel
Bodrog
Theiss
Danube
Oder
Elbe
Vistula
Warthe
Bug
Pripet
Dniester
Pruth
Sereth
Save
Drave
Moldau
Eger
Saale
Weser
Main
Rhine
Neckar
Mosel
Lahn
Fulda
Werra
Leine
Aller
Ems
Harz Mts.
Brocken
Erzgebirge
Bohemian Forest
Bavarian Forest
Riesengebirge
Carpathian Mts.
Tatra Mts.
Transylvanian Alps
Jablunka Pass
Dukla Pass
Lupkow Pass
Uzsok Pass
Verecke Pass
Tihany
Lake Balaton
Lake Neusiedler
Semmering
Brenner Pass
Tauern
Salzkammergut
Tyrol
Vienna Woods
Jura
Thuringian Forest
Rugen
Usedom
Wollin
Fehmarn
Sylt
Heligoland
Kiel B.
Eckernförde
Flensburg
Kattegat
Skagerrak
Baltic Plateau
Lithuanian Lakes
Masurian Lakes
Tannenberg
Marienwerder
Graudenz
Thorn
Kulm
Strasburg
Soldau
Neidenburg
Ortelsburg
Lyck
Johannisburg
Angerburg
Insterburg
Tilsit
Memel
Libau
Windau
Mitau
Riga
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Planet News]

PRAGUE. THE KARLSBRIDGE WITH ITS BRIDGEHOUSE, AND THE OLD TOWN

following which Britain and France would join in an international guarantee of the remaining frontiers.

On Sept. 21 the government accepted, resigning the next day, when General Sirový became premier. Two days later, however, Hitler (at Godesberg) demanded immediate occupation by Germany, pending a plebiscite, of an area much larger than anticipated. Czechoslovakia declared the new demands absolutely unacceptable and ordered general mobilization. In spite of intercession by Britain and the U.S.A., Germany maintained her demands, although on Sept. 29 Czechoslovakia offered further concessions, suggesting alternatively arbitration. The same day the Munich Four-Power Agreement provided that Germany should occupy between Oct. 1–7 four zones described as preponderantly German, and a fifth zone (limits to be fixed by an International Commission) on Oct. 10. The International Commission was to determine the areas for plebiscite. The problem of the Polish and Hungarian minorities was to be settled by direct negotiation, or, failing agreement within three months, by the Four Powers, after which Germany and Italy would join France and Britain in guaranteeing the new frontiers. Czechoslovakia accepted under protest. The cabinet was reconstructed on Oct. 4, Beneš resigned the presidency (temporarily assumed by Sirový) on Oct. 5. On Oct. 6 the Commission fixed the limits —again unexpectedly extensive—of zone 5. The plebiscite was dropped (Oct. 13) in favour of further direct negotiations. The final frontier was fixed on Nov. 20, Germany acquiring 67 villages in excess of the original proposals and ceding 27. Germany also received a corridor for a motor-road right through Bohemia.

The Polish and Hungarian Questions. Poland had already demanded Teschen (Sept. 20); Hungary notified her claims the same day. On Oct. 1, following an ultimatum, Czechoslovakia accepted Poland's demands. A first zone was occupied that day, the remainder of the Teschen area by Oct. 11; this included Bohumin (Oderberg), which Germany had meant to take. The last districts were ceded on Oct 27. The negotiations with Hungary opened on Oct. 9 and proved difficult. An arbitral award on Nov. 2 gave Hungary the southern edge of Slovakia and Ruthenia (*see* HUNGARY).

Czechoslovakia's total losses were thus: to Germany, 10,900 sq. m. with a pop. (1930 Czech census) of 3,600,000 (2,800,000 Germans, 750,000 Czechs); to Poland, 770 sq. m., pop. 240,000 (77,000 Poles, 130,000 Czechs and Slovaks); to Hungary, 4,630 sq. m., pop. 1,040,000 (592,000 Magyars, 294,000 Czechs and Slovaks, 45,000 Ruthenes, 44,000 Germans, 50,000 Jews).

Internal Reconstruction. Czechoslovakia's internal structure was grievously disorganised; she was further burdened by numerous refugees—Czech, German, and Jewish. A British contribution of £10 millions gave small relief. On Oct. 14 the new foreign minister visited Hitler and promised a "loyal" attitude towards Germany. An economic mission subsequently visited Berlin. The Communist Party in Prague was dissolved, and the Pact with the U.S.S.R. dropped (Oct. 21). On Nov. 12 the main Conservative parties fused in a National Party, the Left forming an United Opposition. On Nov. 17 parliament declared it would adopt an entirely new orientation of policy.

The chief Slovak parties had formed a Slovak Front on Oct. 5 and demanded autonomy, although declaring they would not secede. On Oct. 6 Prague agreed to a wide federative system with a Slovak diet, with representation in a central government The new government adopted a "Christian and national" (totalitarian and anti-Semitic) policy. In Ruthenia, the Czechs retained their troops and administration, but set up a diet with Ruthene ministers, who declared for federal union with Czechoslovakia. All political parties were dissolved. Successive ministers proved unreliable and fled or were imprisoned. Guerrilla fighting went on between the Czechs and Germans on one side, Poles and Magyars on the other, the Ruthenes usually remaining neutral. In December Germany insisted that her wish should prevail and Ruthenia remain within Czechoslovakia. The surviving premier, M. Vološin, belonged to the Ukrainian faction. The pro-Russian tendencies were re-

pressed. On Nov. 19 the Prague parliament adopted the Slovak and Ruthene Autonomy Bills. These transformed Czechoslovakia from a centralized into a federal state in which the three units (Bohemia-Moravia, Slovakia, and Ruthenia) enjoyed in theory very wide independence; although only Slovakia was able to realize this *de facto*, the Czechs continuing to garrison and administer Ruthenia. On Nov. 30 Dr. Emil Hácha was elected president On Dec 1 M. Beran, formerly an Agrarian, formed a new cabinet on an authoritarian and Germanophile basis

See E Wiskemann, *Czechs and Germans*; S Grant Duff, *The Czechs and Europe*. (C. A. M.)

Area and Population :

Area (1937) 54,244 sq miles.
,, (Nov. 1938) *c.* 38,000 sq. miles.
Population (est. June 1937) 15,239,000
,, (est. Nov. 1938) *c.* 10,300,000
Chief Towns (pop. census 1930) Prague (848,823), Brno (Brünn) (264,925), Bratislava (123,892), Plzen (Pilsen) 114,704.

President. Dr. Emil Hácha.

Language. Czech mainly.

Religion. Christian (mainly R.C., 10,831,696 in 1930).

Production 1937 :

Wheat	1,395,300	metric tons
Barley	1,815,000	,, ,,
Rye	1,484,600	,, ,,
Oats	1,372,400	,, ,,
Maize	343,200	,, ,,
Potatoes	12,362,600	,, ,,
Lignite	18,042,000	,, ,,
Coal	16,951,000	,, ,,
Pig Iron	1,675,000	metric tons
Steel	2,315,000	,, ,,
Artificial Silk	4,242	,, ,,
Index of Industrial Production (1929 = 100) :		
(Average 1937)	96·3	
(,, June 1938)	89·9	

Labour :

Number employed (average 1937)	2,256,000
,, ,, (end of June 1938)	2,427,000
Unemployed on benefit (average 1937)	151,167
,, ,, ,, (end of June 1938)	121,827

Foreign Trade 1937, merchandise :

Imports	10,965,300,000 koruna
Exports	11,952,700,000 ,,

Communications 1937 :

Roads : national, 5,290 miles ; total, 43,520 miles.
Railways : State, 7,080 miles, total, 8,630 miles.

Finance and Banking:

Revenue, ordinary (est. 1938)	10,120,200,000 koruna
Expenditure ,, ,, ,,	10,117,000,000 ,,
Public Debt (Jan. 1, 1938)	47,094,400,000 ,,
Note Circulation (June 30, 1938)	7,947,443,000 ,,
,, ,, (Nov. 15, 1938)	6,747,157,000 ,,
Gold Reserve (June 30, 1938)	2,651,897,000 ,,
,, ,, (Nov. 15, 1938)	2,356,499,000 ,,
Exchange Rate (average 1937)	141·51 koruna = £1 stg.
,, ,, (Nov. 26, 1938)	135·5 koruna = £1 stg.

Education 1935–36 (end of) :

Elementary : schools, 20,005 ; scholars, 1,592,863.
Secondary : ,, 354 ; ,, 103,341.

Miscellaneous :

Motor vehicles licensed (Dec. 31, 1936) : cars, 84,844 ; commercial vehicles, 30,406 ; motor-cycles, 60,153.
Wireless receiving set licences (Dec. 31, 1936) 928,112.

D

DAHOMEY: *see* FRENCH WEST AFRICA AND THE SAHARA.

DAIRY FARMING AND DAIRY PRODUCE. Within the comparatively small area covered by Great Britain, there was during 1938 an extraordinary variation in the weather and other conditions influencing milk production. In Scotland and the north and west of England there was an abundant rainfall, which resulted in an ample supply of grass during the summer, and of hay and roots for autumn and winter milk production. In the remainder of England a severe drought during the spring and summer caused a serious shortage of grass and a still more serious shortage of hay and roots for winter feeding. These deficiencies had to be made good by extensive purchases, mainly of concentrated foods, and by this means a reduction in the output of milk was avoided. To help to meet the extra cost of production, an increase of *4d.* per gallon in the contract price for milk was sanctioned for July.

The number of dairy cattle was very similar to 1937; the census of June 4 showed no significant changes in the respective classes of stock. The monthly statements issued by the Milk Marketing Board, however, showed an increase in the quantity of milk handled by the Board during the year, due in part to the inclusion of the milk produced by herds holding "Tuberculin-tested" licences, and by herds of four cows and under, which had previously been exempted from the Milk Marketing Scheme, and probably in part to a slightly higher production per cow.

There has been increasing difficulty in obtaining satisfactory labour in many districts, and many producers are giving special attention to the installation of milking machines of the auto-recorder and releaser type, and to other mechanical aids in the management of dairy herds.

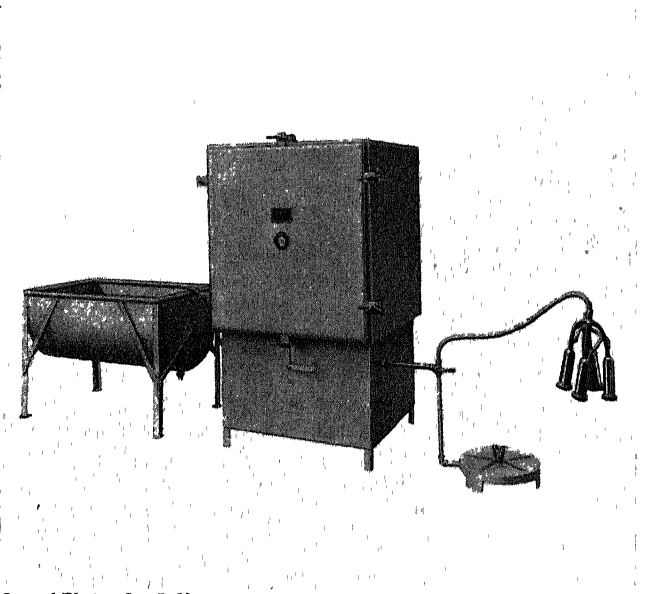
During the year the Attested Herds Scheme, for the recognition of herds entirely free from tuberculosis, has made great progress. At the end of Dec. 1937 there were 812 attested herds in England and Wales and 640 in Scotland, and by the end of 1938 these numbers had increased to about 2,400 and 1,000 respectively. The number of herds producing "Tuberculin-tested" milk under the Milk (Special Designations) Order issued by the Ministry of Health had also increased, by some forty per cent, to over 3,000, and the number of holders of "Accredited" licences had increased to fully 23,000. A slight increase in the quality premium which can be earned by the producers of these grades became operative in Oct. 1938, and the financial benefits now obtainable by producers of graded milk will encourage many others to qualify for licences.

In the Dominions south of the equator yearly periods ending in December include the later half of one production season and the first half of the next, and this point is of importance when summarizing dairy farming conditions. In New Zealand a dry summer followed by a cold wet spring resulted in a decrease of some fifteen per cent in milk production. In certain areas production was also decreased by the incidence of facial eczema amongst cows. Systematic efforts to control mastitis are being inaugurated following a survey on the prevalence of this disease amongst herds in the herd-testing associations To aid in the fixing of a fair price for milk and milk products, standards of efficiency of production have been recommended by a representative committee. In Australia, a drought during the summer of 1937–38 lessened production, particularly in Victoria and New South Wales, but the output of milk attained the normal level during the later months of the year

South Africa suffered in the early part of the year from the severe drought of 1937–38, but there was a marked improvement in climatic conditions and milk production during 1938, particularly in South-West Africa.

In Canada, where the production season is the same as in Britain, favourable weather conditions stimulated milk production, and the output per cow was greater than in 1937. This improvement extended to the prairie provinces, but was not so marked in the maritime provinces. In Ontario, new legislation requires that only pasteurized milk may be sold in all towns and villages with a population of over 1,000, and it is claimed that this is the largest area in the world to which compulsory pasteurization has been applied.

Milk, Butter, and Cheese. The proportion of the total milk production in Great Britain used for liquid consumption continues to increase, and this tendency is stimulated by schemes for the use of milk in schools and by industrial workers sponsored by the National Milk Publicity Council. The increase in total production during the last year has, however, been greater than the increase in the sales of liquid milk, hence a larger amount has been available for the manufacture of butter, cheese, and other products. The proportion of the total output used in manufacture was fully thirty per cent, and an increasing share of this quantity was allocated to those products which could afford a higher price for the milk so used. The manu-



General Electric Co., Ltd.]

ELECTRIC STERILIZING CHEST WITH LAYOUT FOR SUPPLYING HOT WATER TO WASHING TROUGH AND EXTERNAL STEAM JET FOR CHURN-STOOL AND MILKING MACHINE CLAW ASSEMBLY

facture of cheese on farms in England has also increased during the year, an additional 4,000,000 gallons being utilized in this manner.

In New Zealand the production of both butter and cheese has decreased, and the trend from butter production to the manufacture of cheese has proceeded at a slower rate. In Australia there was a decrease in the production of dairy products during the early part of the year, but, in spite of a lack of rain in the later months, production, especially in Queensland, equalled, and in some months appreciably exceeded, that of last year.

The production of butter and cheese in South Africa increased during the year, the manufacture of cheese continues to increase, owing to more favourable prices. To avoid a repetition of the shortage of butter which occurred in 1937, action was taken by the government to assist in the storing of an additional reserve to meet requirements in the months of low production

In Canada, the quantity of butter made has increased, but there has been a slight reduction in the manufacture of cheese. There has, however, been a marked increase—some nineteen per cent—in the production of concentrated milk during the year. This was mainly in evaporated milk (unsweetened) and in skim milk powder. (J. MH.)

The declining trend in dairy herds in the United States since 1934 was reversed in 1938 with a slight addition, less than one per cent, to the 24,902,000 cows and heifers more than two years old kept on farms for milking purposes on Jan. 1. The number of yearling heifers being kept for milk cows was 4,923,000 head on Jan. 1, 1938, and on Jan. 1, 1939, was 5,100,000, according to preliminary estimates by the U.S. Department of Agriculture. This should result in an increase of about two per cent in milk cows in 1939, providing older animals are not culled too severely. Milk production in 1938 was estimated at probably four or five per cent more than the 103,000 million lb. production of 1937. The milk flow, from below average production in February, reached a record peak on June 1 and continued at record levels in autumn and winter production.

To-day nearly two-thirds of the manufactured dairy products in the United States are produced in the twelve north central States, and in 1938 cash butter, sold on the Chicago Mercantile Exchange, reached a record of 73,398,087 pounds. The production of the principal products was much larger in the first eight months of 1938 than in 1937, but cheese was the only one showing an increase in consumption, about four per cent in the first eight months. Prices for dairy products declined, although the government entered the market to support the price of butter. Consumption of milk and cream also declined in most urban districts, owing to the recession in buying power beginning in 1937, and ice-cream consumption in 1938 was below that of 1937. The movement of evaporated milk into distribution channels during the first eight months of 1938 was reported by the U.S. Department of Agriculture as about six per cent less than in the same period in 1937.

DALADIER, EDOUARD (1884–), French politician, of whom a biographical notice will be found in the *Ency. Brit.*, vol. 6, p. 985. The son of a baker, he was educated at Lyons, and was a school-teacher until the War, in which he served, retiring as a captain (*Croix de Guerre, Légion d'Honneur*). In 1919 he entered the Chamber as a radical-socialist. Minister of war in 1925, president of the Radical party since 1927, he formed in 1933 a ministry which lasted ten months, and then served under Sarraut and Chautemps. In 1934 he formed another government which, as a result of the riots following the Stavisky scandal, lasted only a few days. Minister of war since 1936 in various *Front Populaire* governments, in April 1938 he became prime minister. He was created G.C.M.G. during the Paris visit of the British Sovereigns in July. At the height of the German-Czech crisis M. Daladier declared partial mobilization, visited London, and later attended the Four-Power Conference in Munich, the peaceful outcome of which added greatly to his prestige, though a minority of extremists termed it a shameful surrender. His subsequent delay in taking measures to restore finances, for which he had been accorded special powers by the Chamber, tended to weaken public confidence in him. An advocate of a modification of the forty-hour week, he pilloried the dissentient communists for their illogical policy in a speech at the annual socialist-radical congress in October, when relations with the communist party were broken off. A widower, M. Daladier has two sons.



Central Press Photos]
M. EDOUARD DALADIER

DAMS. The accompanying table was condensed from a list of over 75 important dams recently completed or now under construction.

The Grand Coulee dam, in the United States, continues to be a most spectacular undertaking, as the world's largest



Fox Photos]
HAWESWATER DAM, PROVIDING A NEW RESERVOIR FOR MANCHESTER, UNDER CONSTRUCTION, AUG. 24, 1938

Chief Dams Completed or Under Construction During 1938

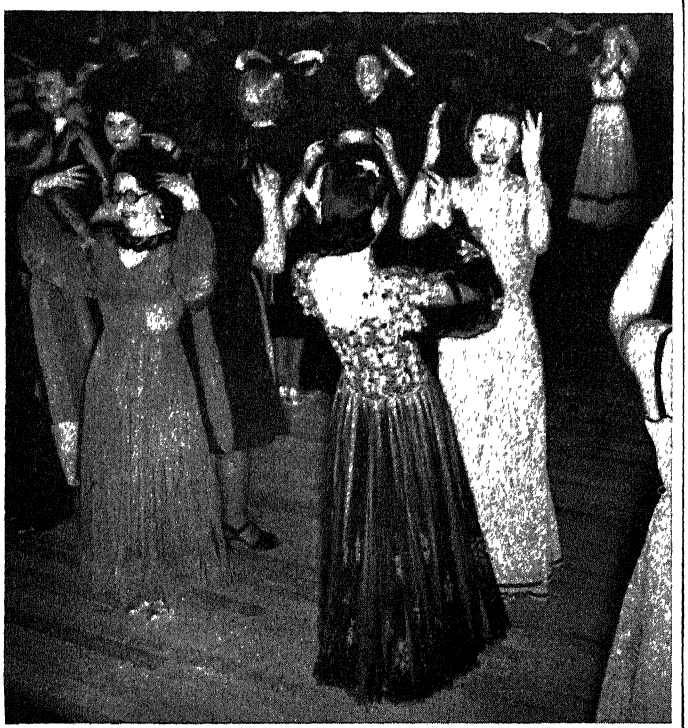
Name of Dam	River	Place	Type	Maximum Height, Feet	Crest Length, Feet	Volume (cu yds)	Purpose *	Built By	Progress*
Alamogordo	Pecos	New Mexico, U S.	Earthfill	138	2,900	1,885,000	I	U S Reclamation Bureau	C
Alcova	North Platte	Wyoming, U S	Earth and rockfill	266	900	1,496,817	I	U S Reclamation Bureau	C
Bartlett	Verde	Arizona, U S	Concrete, multiple arch ‡	270	750	157,725	I	U S. Reclamation Bureau	U
Cajalco	Offstream	California, U S	Earthfill	210	2,170	3,175,000	W	Metropolitan Water District (California)	C
Conchas	S Canadian	New Mexico, U.S	Concrete, straight gravity	220	1,250	647,380	F, W, P	U S Army Engineers	U
El Palmito	Nazas	Mexico	Earthfill	295	—	6,632,348	I, P	Mexican National Commission of Irrigation	U
Fort Peck	Missouri	Montana, U S	Earthfill, hydraulic	242	9,000	100,000,000	F, P	U S Army Engineers	U
Fuihodo	Yalu	Manchukuo	—	298	2,730	3,530,000	P	Yalu River Hydro Electric Co	U
Genissiat	Rhone	France	Concrete, straight gravity	330	—	—	N, P	Compagnie Nationale de Rhone	U
Grand Coulee	Columbia	Washington, U.S	Concrete, straight gravity	550	4,200	11,250,000	I, F, P	U S Reclamation Bureau	U
Hansen	Big Tujunga	California, U S	Earthfill	110	9,050	13,300,000	F	U S Army Engineers	U
Haweswater	Haweswater	Westmorland, Eng	Concrete, hollow buttressed	120	1,550	120,000	W	Manchester Corporation	U
Imperial	Colorado	Ariz.-Calif., U.S	Concrete, hollow "floating weir"	45	3,430	2,191,800	I	U S Reclamation Bureau	C
Kingsley	North Platte	Nebraska, U S.	Earthfill, hydraulic	162	11,000	26,000,000	I, P	Central Nebraska Public Power and Irrigation District	U
Madero	Arroyo Hondo	Mexico	Rockfill	164	-	258,964	I	Mexican National Commission of Irrigation	C
Marshall Ford	Colorado	Texas, U S.	Concrete, straight gravity	265	2,500	1,758,700	F, P	U S. Reclamation Bureau	U
Parker	Colorado	Ariz.-Calif., U S	Concrete, constant-radius arch	320	800	260,000	W, P	U.S Reclamation Bureau	C
Quabbin	Swift	Massachusetts, U.S.	Earthfill	120	1,800	2,100,000	W	Metropolitan Water District (Mass.)	C
Shasta	Sacramento	California, U.S.	Concrete, straight gravity	560	3,500	5,400,000	I, F, P	U S. Reclamation Bureau	U
Vaalbank	Vaal	South Africa	Concrete, gravity	160	1,700	220,000	W, I	Transvaal Irrigation Dept	C

* I Irrigation, F Flood control, P Power, N — Navigation, W — Water supply, C — Completed in 1938, U - Under construction. ‡ Highest in world.

concrete dam. The low dam was completed early in 1938, and work was immediately commenced on the project of increasing it by some 300 ft. to a total height of 550 ft Towering 200 ft above the low dam, the steel trestle for carrying concrete trains is complete. An unusual feature of the construction of the Shasta dam is the necessity of boring a tunnel in the west abutment for a temporary relocation of the tracks of the Southern Pacific railroad. Later on, the tracks will be removed to a permanent relocation and the tunnel will be used for the diversion of the river. Construction of the Fort Peck dam received a setback on Sept 22, when there occurred a considerable movement of the earth in the upstream face near the east abutment, involving approximately 8,000,000 cu. yds. of fill. An investigation was started to discover the cause of the slide. Fortunately it did not block the four diversion tunnels, 25 ft. in diameter, driven through the shale under the east abutment, and they are in normal operation The Parker dam, below Boulder on the Colorado river, is now ready to divert water into the Colorado aqueduct for Los Angeles. This dam is unique in that, of its 320 ft. of height, 235 ft is beneath the river bed.

The Vaalbank dam of the Vaal-Hartz project, now completed, has already been of considerable assistance in storing spring floods and alleviating autumn drought Dam No. 2, one of five to be built on the Volga, has been started. The Genissiat dam on the Rhone will soon be under way. The Fuihodo dam on the Yalu river will provide power to operate seven generators with an output of 92,000 kw. each, compared with 82,000 kw. each at Boulder.

(*See* also IRRIGATION)



Humphrey Spender]

THE "CHESTNUT TREE" DANCE, INTRODUCED LATE IN 1938

DANCING. In the ballroom during the year 1938 there has been a decided tendency for British dances to become more sociable. The coming of the "Big Apple" from America in 1937 foreshadowed this, but the very "hot" nature of the music for that dance appealed to only the younger dancers in Great Britain, and a simpler substitute which both young and old could do with ease was found in the "Lambeth Walk." This dance had its origin in a catchy Cockney song of the same name, sung and danced in the review *Me and My Gal* at the Victoria Palace, London This was subsequently adapted for the ballroom, and is performed somewhat in the manner of the old "Barn Dance", with the introduction of conventional Cockney movements. It quickly displaced the "Big Apple", and not only took England by storm, but has been received with equal enthusiasm both on the Continent of Europe and in the United States. It is possibly the first instance on record in modern times of an English "invented" dance finding favour first in the popular dance halls and subsequently in the smartest ballrooms of all countries. Another instance of the desire to add more festiveness to British ballrooms has been the occasional introduction, at all kinds of dances, of the old "Palais Glide", which had a considerable vogue in popular ballrooms in the North of England some years ago. This is even more of a romp than the "Lambeth Walk".

Among more serious dancers, both in Britain and on the Continent, the four standard dances, modern waltz, foxtrot,

tango, and quickstep, continue to dominate the ballroom, though the foxtrot is seldom danced on the crowded small floors of the smart hotel and restaurant The quick or Viennese waltz is increasing in popularity, particularly in the West End of London

For the first time a team of Danish amateurs was able to beat a team of English amateurs in the annual match at Copenhagen. Herr Max Wendt (Germany) was the sole adjudicator. The British amateur championship was won by Mr. Bobbie Israel and Mrs Eirene Browne, and the British professional by Mr Cyril Farmer and Miss Adela Roscoe Both events were held at Blackpool, and the former was again broadcast. The British dancers, Mr. John Wells and Miss Renée Sissons (amateurs), and Mr Arthur Norton and Miss Pat Eaton (professionals), won several international competitions in Germany, where the "English style" is still paramount

During the year the Imperial Society of Teachers of Dancing sent an examiner to conduct ballroom examinations on their behalf in Australia The Royal Academy of Dancing sent an examiner to conduct their "Children's Examinations" in South Africa.

Mr. Alexander Genée, best known in England as the uncle and teacher of Madame Adeline Genée, who in his younger days had established a considerable reputation on the Continent as a dancer and producer, died at Brighton on June 29 in his 89th year. (P J S. R.)

In the United States the year 1938 was marked by an intense and almost feverish exploitation of new dance steps, community and group dancing, and by the importation of foreign dances. For a similar craze in new and wild dance-steps one must go back to 1913 and 1914, when, on the eve of the World War, hitherto conservative ballroom dancers took up such exotic steps as the maxixe, "Bunny Hug", Grizzly Bear", and "Chinese Ta-Tao". There would seem to be some connexion between a period of tension and a sudden popularity in extravagant dances.

Sociologically, the most distinctive phenomenon of 1938 was the continued and even rising popularity of group dances like the "Big Apple", a melange of wild and often spontaneous steps danced to fast swing music by groups of eight or ten people. The "Lambeth Walk" was introduced from England late in the summer of 1938. It leapt into popularity, as a reaction against the undignified jitterbug dances and because of its simplicity made it possible for persons to dance it after ten minutes' instruction Fast as the "Lambeth Walk" rose in favour, it fell just as fast. For one thing, it could only be danced to one song, and the dancers soon tired of it The "Palais Glide", another group ballroom dance from England, made some headway in America.

With the younger generation, the shag, with its dozens of variations, remained the favourite step. Swing bands and racy rhythms held their popularity, and the energetic swing steps stayed on top. The foxtrot and waltz nevertheless remained the basic steps, and the rhumba, the conga, and the tango were as popular as before. Ability to do the rhumba is gradually coming to be considered a necessity on the dance floor.

The sources for new American ballroom dances continue to be enlarged, teachers going to South America for inspiration. Argentina, Brazil, and Chile have all supplied dances, the most remarkable of which is the samba, the national dance of Brazil. The samba is an intricate, graceful, and exciting dance. It is about 110 years old, and was invented by Don Chalasa, a courtier in the court of Dom Pedro, the first emperor of Brazil It is first cousin to the maxixe, also a Brazilian dance, which gained popularity before the War.

BIBLIOGRAPHY Arthur Murray, *How to Become a Good Dancer* (New York, 1938).

D'ANNUNZIO, GABRIELE, Prince of Montenevoso, Italian poet, novelist, and soldier, was born at Pescara in the Abruzzi on March 12, 1864, and died at Gardone, on Lake Garda, on March 1, 1938 An account of his life and work may be found in the *Ency. Brit*, vol 2, pp 5–6 His later years were comparatively uneventful, one of the most characteristic incidents being the interest he took in an operation for appendicitis which he underwent in 1929 under a local anæsthetic His published works amounted to 64 volumes, and in 1935 his autobiography was published under the title of *Hundred and Hundred and Hundred and Hundred Pages of the Secret Book of Gabriele D'Annunzio Tempted to Die.*

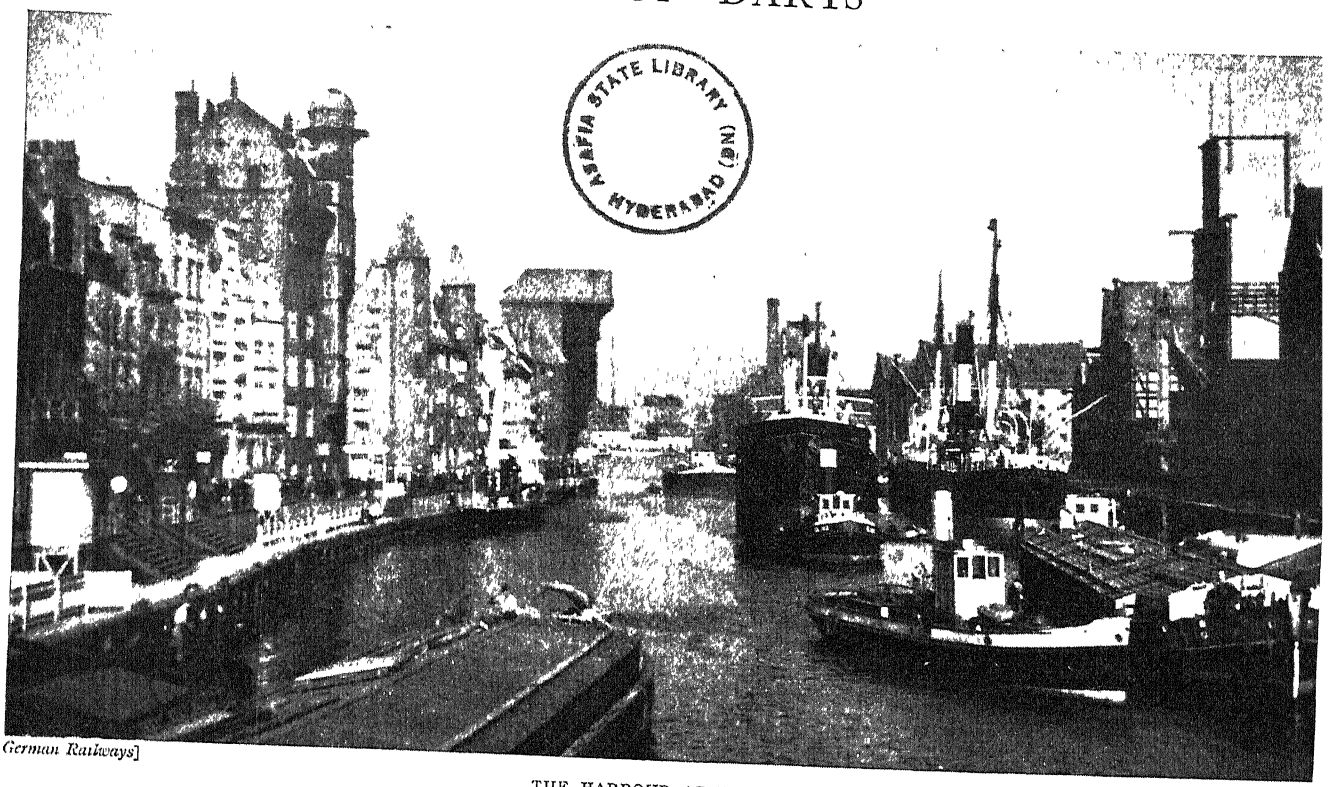


Wide World Photos]
GABRIELE D'ANNUNZIO

DANUBE. On Aug. 18 an agreement was signed at Sinaia between the Powers represented on the European Commission of the Danube, with the exception of Italy (*i e.* Great Britain, France, and Rumania). This made many concessions to demands which had long been pressed by Rumania All authority over the port of Sulina, the technical work at the mouth of the Danube and the inspectorate of navigation, observers, and pilots passed to Rumania. Rumania took over the property of the Commission (boats, dredgers, lighthouses, etc.) and also the service of its loans, the Commission agreeing in compensation to pay Rumania all receipts from navigation for a period of years. Rumania organizes under her Ministry of Air and Navigation a new autonomous service, known as the "Directorate of the Maritime Danube".

In 1938, Germany also opened up negotiations with the other main riparian States to obtain a revision in her favour of the regime controlled by the International Danube Commission (which moved its seat from Vienna to Belgrade). These had not led to any definite result by the end of the year. (C. A. M)

DANZIG. Affairs in Danzig were settled during 1938 by direct Polish-German negotiation instead of by the League of Nations. In a speech early in February, Herr Förster, the Nazi chief in Danzig, said that Berlin had assumed control of Danzig's foreign policy, and that, since the last vestiges of the opposition had disappeared, the Nazi party alone would rule in the Free City. At the meeting of the Volkstag on June 20, to celebrate the fifth anniversary of the Nazi accession to power in Danzig, every deputy wore Nazi uniform, except two Poles ; and the session confirmed the *Gleichschaltung* of all political parties, except the Poles. Throughout the year it was understood that Poland had given up political claims in return for economic concessions. After the summer, fresh difficulties occurred with Poland, especially when many Danzigers went to Germany to share in the autumn manœuvres. On Oct. 10, Förster announced


ASIATIC STATE LIBRARY HYDERABAD (DN)

German Railways]

THE HARBOUR AT DANZIG

that "the Germans in Danzig will soon be rewarded for their suffering, just as the Germans in Austria and the Sudetenland were rewarded". After Oct. 12, the Nuremberg anti-Jewish laws were openly enforced, and the year closed with a feeling that Danzig's reincorporation in the Reich was soon to become a practical issue. (S. H. R.)

Area and Population :
Area 754 sq. miles.
Population (est. Dec. 31, 1936) 405,000.
High Commissioner. Dr. Karl Burckhardt.
Overseas Trade 1937 :
Imports, 141,840,000 gulden ; Exports, 355,080,000 gulden.
Unemployment : number registered, average (1937) 8,009
" " " (Sept. 30, 1938) 1,200
Shipping : net tonnage of vessels entered :
Monthly average 1937 335,000 tons ; Oct. 1938 419,000 tons.
Finance and Banking :

Revenue and Expenditure (1936–37)	77,300,000 gulden
Public Debt (March 31, 1936) . .	41,700,000 "
Notes in Circulation (Nov. 30, 1938)	39,000,000 "
Gold Reserve (Nov. 30, 1938) . .	28,000,000 "
Exchange Rate (Dec. 23, 1938)	25 gulden = £1 stg.

Education : elementary : schools, 299 ; scholars, 52,088.
" middle and high : " 16 ; " 8,800.

D'ARCY, The Most Rev. CHARLES FREDERICK, Archbishop of Armagh and Primate of All Ireland, was born on Jan. 2, 1859, and died on Feb. 1, 1938. After graduating at Dublin University, he became in 1884 curate at St. Thomas's, Belfast. He was subsequently rector of Billy, and later of Ballymena, in Antrim, and in 1900 became vicar and dean of Belfast cathedral. He was bishop of Clogher, 1903–07 ; of Ossory, Ferns, and Leighlin, 1907–11 ; of Down and Connor, 1911–19 ; and archbishop of Dublin, 1919–20. In April 1920 Archbishop D'Arcy was unanimously elected by the bishops to succeed Archbishop Crozier as Archbishop of Armagh and Primate of All Ireland. His publications included *Idealism and Theology*, 1897 (the Donellan Lecture) ; *Christian Ethics and Modern Thought*, 1912 ; *Science and Creation*, 1925 ; *God in Science*, 1931 ; and *The Adventures of a Bishop*, 1934.

DARDANELLES : *see* TURKEY.

DARROW, CLARENCE, American lawyer, was born in Ohio on April 18, 1857, and died on March 13, 1938. After being called to the bar in 1878, he began practising in Chicago, and quickly gained a reputation as counsel for various labour organizations. Among the outstanding cases in which he figured were the trial of Eugene Debs, a Socialist candidate for the presidency, in 1894 ; the arbitration over the anthracite strike in 1902 ; the defence of the Macnamara brothers for a dynamite outrage in 1911 ; the defence of the boy murderers Loeb and Leopold in 1924 ; and the defence in 1925 of J. T. Scopes, the Tennessee schoolmaster, against a charge of teaching evolutionary doctrines.

DARTS. From obscure and crude beginnings in the remote past, this English sport has comparatively recently developed into a highly skilled and sophisticated game. Its chief venue is the public-house, where the various brewers have their leagues and run matches, tournaments, and championships. But the game is also played at the universities and in clubs, etc., and even at church bazaars, while on Dec. 16, 1937, their Majesties each threw a dart at the Social Centre of the new Slough Trading Estate.

The National Darts Association was founded in a North London public-house in 1924. It standardizes the rules for match play, registers the leagues, arranges championships, and generally controls the game. Its organ is the *News of the World*.

In 1938 was founded the "Royal Society of Dartsmen" which, according to its constitution, "is a non-political and entirely irrelevant body to promote good dartsmanship, and to maintain the purity, quality, and strength of beer". It was originated by the Appeal Committee of the London Fever Hospital, and its other object is to raise funds for hospitals. Among members of the governing body of the

London Fever Hospital who have lent their names to it are the Earl of Lytton, Adm.-of-the-Fleet Sir Roger Keyes, A. P. Herbert, M.P., and Leslie Henson; before the end of the year some 110,000 members had joined, and it had raised over £3,000 for the voluntary hospitals. *See* also PUBLIC HOUSE GAMES. (L. H. D)

DAWBER, SIR GUY, British architect, died in London on April 24, 1938, at the age of 76. He received his education and training at King's Lynn (his birthplace), the Royal Academy Schools, and the offices of Sir Thomas Deane in Dublin and Sir Ernest George, R.A., in London. He practised in Gloucestershire and London, but the majority of his work was done as a domestic architect in the provinces. He gave special attention to the design and lay-out of gardens. Dawber was elected A.R.A. in 1927 and R.A. in 1935. In 1928 he was awarded the Royal Gold Medal of the R.I.B.A., and was president of the R.I.B.A. from 1925 to 1927. Recently he was made honorary member of the Royal Society of Painters in Water Colours. He was knighted in 1936. His publications included *Old Houses in Kent and Sussex* and *The Cotswold District.*

DAY, The Most Rev. JOHN GODFREY FITZMAURICE, Archbishop of Armagh and Primate of All Ireland, was born on May 12, 1874, the son of the late bishop of Clogher, and died in Dublin on Sept. 26, 1938. He graduated in Theology at Pembroke College, Cambridge, and was ordained in 1897. After holding curacies at Coventry and Hoxton, he was in India from 1902 to 1909 with the Cambridge Mission to Delhi. He was vicar of St. Ann's, Dublin, 1912–20; canon of Christ Church Cathedral, Dublin, 1914–20; and professor of Pastoral Theology in the University of Dublin, 1917–20. In 1920 he was appointed bishop of Ossory, Ferns, and Leighlin; and on April 27, 1938, the bishops of the Church of Ireland elected him to succeed Dr. D'Arcy as Archbishop of Armagh and Primate of All Ireland. Dr. Day was enthroned on June 9.

DEAFNESS: *see* EAR, NOSE, AND THROAT, DISEASES OF.

DEATH DUTIES: *see* TAXATION.

DEATH STATISTICS: *see* VITAL STATISTICS.

DECCAN STATES, in the S. of Bombay presidency, are under the superintendence of the British resident at Kolhapur, the largest principality of the group. Other important members of it are Janjira, Sawantwadi, Bhor, and Sangli. The total area is 10,926 sq. miles, and the pop. nearly 2½ millions.

DE FILIPPI, CAVALIERE FILIPPO, Italian explorer, was born in Turin on April 6, 1869, and died in Florence on Sept. 23, 1938. A brief account of his life and publications may be found in the *Ency. Brit.*, vol. 7, p. 138. To the list of his previous publications he added, in 1932 and 1937 respectively, the two volumes of *Ippolito Desideri of Pistoia, S.J.: His Travels and Account of Tibet, 1712–1727.*

DELHI. This tiny province (only 573 sq. miles in area) was carved out of the Punjab in order to form a surround for New Delhi, the present capital of India, as well as for the historic city of Delhi and the ruins of its numerous forerunners. The magnificent array of buildings which compose New Delhi are now in full working order; but the Governor-General and the staff of the central government move to Simla for the hot and rainy seasons.

DENHAM, SIR EDWARD (BRANDIS), British administrator, was born in 1876, and died in Jamaica on June 2, 1938. He was educated at Malvern College and Merton College, Oxford, and in 1899 was appointed to a cadetship in the Ceylon civil service, in which he laid the foundations of a distinguished administrative career. He subsequently held appointments as colonial secretary in Mauritius, 1920–23, and Kenya, 1923–28; was governor of the Gambia from 1928 to 1930, and of British Guiana from 1930 to 1934; and from 1934 until his death was captain-general and governor-in-chief of Jamaica, in which capacity he showed such outstanding ability and won such popularity that the question was raised of his appointment to a second term of office. His death followed a surgical operation. He was created a K.B.E. in 1927, K.C.M.G. in 1931, and G.C.M.G. in 1935.

DENMARK. Forebodings of the Central European crisis prompted protective deliberations, and in April the Foreign Minister attended a conference of Northern Powers on defence questions. Simultaneously an internal loan of £2,275,000 was floated to establish a reserve of raw materials against emergency. Neutrality also occupied the attention of the seven parties to the Oslo Convention, who met several times to consider its working (*see* NORWAY). Early in the year it was announced that trade with foreign countries showed improvement, but the unemployment figure (200,000) was a record. There was much activity on the part of the German minority in Slesvig and Jutland. A Nazi from Jutland fired a blank charge in the parliamentary gallery and showered pamphlets ridiculing the parliamentary system (April), and the Socialist headquarters in Copenhagen were raided (October). In the domestic arena an important event was the adoption of a new Constitution (June). By it, the Rigsdag consists of 205 members, elected, 171 directly (by adults over 23) and 34 indirectly, for four years, the latter contingent augmented by a further 34, designated by their fellows, to form a First Chamber. On June 30 the 150th anniversary of the farmers' emancipation was celebrated at an exhibition in Copenhagen. In January the Queen underwent an operation; in October the Crown Prince paid a visit to London; and on Oct. 24 the King of Norway arrived to stay with King Christian for the eightieth birthday celebrations of their uncle, Prince Valdemar, last surviving brother of Queen Alexandra. In November attention was attracted to the cyclotron apparatus for producing powerful radio-activity in use in Professor Niels Bohr's Cancer Institute. Denmark led in proposing a common Nordic university. (H. Fw.)



Fox Photos]

PARLIAMENT BUILDINGS, COPENHAGEN

Area and Population :
Area 16,575 sq miles.
Population (est. June 1937) 3,749,000
Chief Towns (pop. 1935 census). Copenhagen (843,168), Aarhus (90,898), Odense (76,116), Aalborg (48,132)
Ruler. King Christian X.
Language. Danish.
Religion. Christian (Lutheran).
Production 1937 :

	metric tons		metric tons
Wheat . .	370,000	Potatoes . .	1,324,000
Barley . .	1,090,000	Beet Sugar .	214,600
Rye . .	251,200	Butter . .	183,000
Oats . .	1,024,000	Margarine .	77,700

Number of pigs slaughtered (1937) . . 4,332,000
Production, industrial :
Index of Industrial Production (1937 : 1929 = 100) 136
,, ,, ,, ,, August 1938 : ,,) 134
Shipbuilding, gross tonnage launched (1937) . 131,000
Labour (average 1937) :
Aggregate number of hours worked (1929 = 100) 133·4.
Number of applicants for work . 107,123 (21·9 per cent)
Overseas Trade 1937, merchandise :
Imports . . . . . 1,642,400,000 kroner
Exports . . . . . 1,541,100,000 ,,
Communications and Transport :
Roads, main (April 1, 1937) 7,828·8 km.
Railways (1937) : State, 2,500 km. ; Private, 2,700 km
Airways (1936) : passengers carried, 32,653 ; freight, 271·7 metric tons ; mail, 129·9 metric tons.
Shipping, gross tonnage (June 30, 1938) 1,129,900.
Finance and Banking :
Revenue (1937–38) . . . 466,900,000 kroner
Expenditure ,, . . . 462,800,000 ,,
Revenue (est. 1938–39) . . 516,000,000 ,,
Expenditure ,, ,, . . 514,200,000 ,,
Public Debt (March 31, 1938) . 1,322,600,000 ,,
Notes in Circulation (June 30, 1938) 412,856,000 ,,
Gold Reserve (June 30, 1938) . 117,706,000 ,,
Average Rate of Exchange (1937–38) 22·40 kroner = £1 stg.
Education 1935:
Primary schools, 4,233 ; scholars, 422,150.
Secondary ,, 358 ; ,, 68,800.
Defence 1937 :
Army—compulsory service.—National Militia 14,000.
Navy : 2 coast defence, 8 submarines. Aeroplanes 65.
Miscellaneous :
Motor Vehicles licensed (1937) : 135,000 cars and commercial vehicles ; 27,000 motor-cycles.
Wireless receiving set licences (1936) . . 623,000

DENTISTRY. During 1938, dentistry has advanced broadly along two lines of investigation into the causes of dental disease.

One line of research has confirmed valuable information about the local environment of the teeth, and extended the hypothesis of the local causation of dental disease. The other approach claims that dental pathology has remote factors for origin, and states that departure from normal health of teeth and their surrounding soft structures must be regarded as symptoms of bodily disharmony rather than merely the result of local tissue breakdown.

Support of the local environment school is given by Professor Box of the Research Foundation of Toronto, who in an exhaustive series of investigations shows tooth decay to be identified with a hydrogen-ion concentration of saliva which makes it decidedly acid. In a large-scale research it was found that a definite relationship existed between the degree of acidity and the incidence of decay.

The Research Group at the University of Michigan reports that increased susceptibility to dental decay is found in mouths where the *lacto-bacillus acidophilus* exists in unusually high counts. This micro-organism lives in an acid medium and ferments starchy food débris remaining about the teeth, the end product being lactic or some allied acid and an increased predisposition to enamel destruction This group has carried out carefully controlled feeding experiments on the children of an institution, and records that on a sugar-free diet tooth decay was arrested, and that with the addition of cane sugar the disease again became active In one section of the experiment, children were allowed an unlimited supply of sugar and confectionery, and in this section the incidence of new decay was very markedly increased.

The same workers found that in cultures made from the saliva of the various groups, the number of colonies of *lacto-bacillus acidophilus* was highest in that group having the greatest incidence of caries

At Northwestern University, Chicago, Hatton and his co-workers have reported a relationship between the numbers of tooth cavities observed, the *lacto-bacillus acidophilus* counted, and a chemical susceptibility test. This test shows that when saliva from a susceptible individual is incubated at 37° C. for a definite time, it exhibits the power of dissolving tooth enamel, which varies with the bacterial count, and is a measure of the individual's susceptibility to tooth decay.

White of Michigan, working on the spectrographic examination of saliva, finds the potassium content to be increased in cases of high susceptibility to dental caries, and this finding has been confirmed by chemical estimation.

In England, the work of Broderick takes a more comprehensive view of the causes of dental disease, and serves to co-relate and explain the data presented by other investigators. This view is that dental diseases result from a "colloidal disequilibrium" of the blood serum, and are associated with a disharmony of the sympathetic nervous system, resulting in an upset of the acid-base balance of the blood. It is claimed that with domination of the sympathetic side of the vegetative nervous mechanism, the colloid particles become "dehydrated", and the acid-base balance is upset to the acid side, resulting in dental caries as a local disturbance.

In "dehydration" the colloid particles tend to disintegrate, some of which go into solution, releasing their quota of mineral salts and other blood constituents, which would account for the raised potassium content of saliva previously quoted Sugar, by its action as a "dehydrating" agent, would aggravate the colloidal disequilibrium, and therefore increase the tendency to tooth destruction.

Conversely, with over-activity of the vagus side of the sympathetic system "hydration" of blood colloids obtains, the acid-base balance is tipped on the alkaline side, and pyorrhœa is the locally observed manifestation.

This theory helps to link up the findings of many researches which hitherto have not been co-ordinated, and by stressing the significance of the change in acid-base balance presents an explanation of the acid saliva which favours the multiplication of acid-loving bacteria, both conditions being constant factors in dental caries.

As this knowledge of the etiologic factors of dental disease increases, methods of controlling and preventing the disbalance which causes it may be expected to evolve, and already considerable advances have been made in the field of dental medicine.

While the progress in operative dental techniques continues, and improvement in the materials employed is noticeable, yet the outstanding advance in 1938 has been the increased interest in the medical aspect of dentistry.

BIBLIOGRAPHY. F. W. Broderick, *Principles of Dental Medicine*; J E. R. McDonagh, *Nature of Disease*; H. Hatton and L. S. Fosdick, *Test for Susceptibility to Dental Caries*; Phillip Jay, *Lacto Bacillus Acidophilus and Dental Caries*. (T. S A.)

DETROIT, in Wayne county, in south-eastern Michigan, and on the Detroit river, the metropolis of the State, and the fourth city in the United States; area, 139·6 sq. miles; population (1937 est.) 1,667,000, of which foreign-born number 399,281 Canadian and British predominate, greatly exceeding in numbers the Polish group, which is second in importance.

During 1937, Detroit experienced an unusual economic recovery, followed by a decided regression which was continued throughout the year 1938. However, there was some evidence of recovery during the latter part of 1938. During the year the industry on which the town depends produced about 2,600,000 cars as compared with about 5 million in the previous year

These wide variations in production and resulting employment had marked effect upon the relief load of Detroit and Wayne county and on the public finances of Detroit. The financial difficulties of the city are aggravated by gradually increasing debt charges which result from the refunding of the municipal debt. Detroit was the largest American city to default, the debt being refunded at a heavy cost in deferred interest.

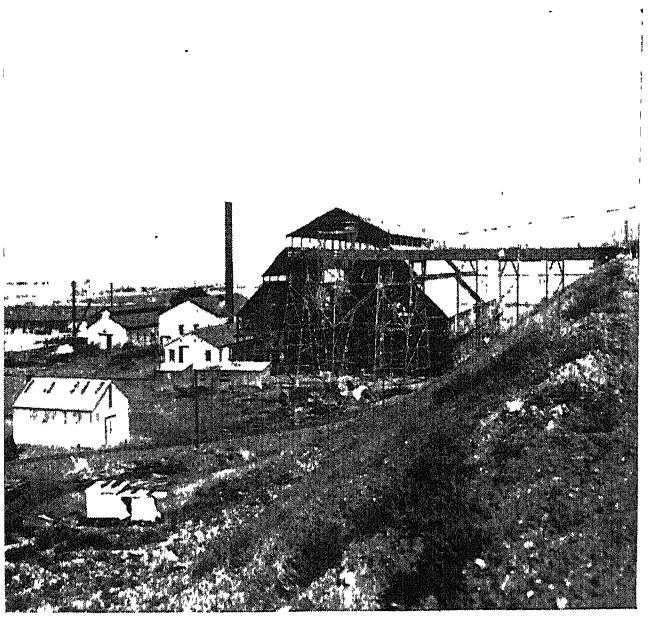
In 1937 Detroit and Michigan were the centre of "sit-down" strikes, but although their settlement by recognition of the United Automobile Workers and cognate unions by the motor-car companies (except by the Ford Motor Company) served to eliminate major controversies, it did not put an end to numerous unauthorized "slow downs" and strikes which interfered seriously with industry because of the interdependence of one motor manufacturing process upon another.

Obvious discord has raged within the ranks of organized labour employed in the industry, at least as far as management has been concerned. In an exciting "trial" in Detroit, the alleged radical vice-presidents were purged from office but were later reinstated through interventions of national officers of the Committee of Industrial Organization. The feud appears to continue.

DIABETES: *see* ENDOCRINOLOGY.

DIAMONDS. Despite a sharp decline in sales, caused by political uncertainty in Europe and the renewed depression in the United States, the production of diamonds reached a new high record in 1938. Final figures are not yet available, but it may be safely assumed that the output approximated to 10 million metric carats, as compared with 9,550,000 in 1937, when the returns for the principal producing countries were as follows (1936 figures in parentheses): Angola, 626,000 carats (577,000); the Belgian Congo, 4,904,000 (4,634,000); the Gold Coast, 1,170,000 (1,175,000); Sierra Leone, 913,000 (616,000); South-West Africa, 190,000 (185,000); Union of South Africa, 1,027,000 (624,000). In connexion with these figures it should be remembered that the grade of diamonds produced varies as between the different countries, nearly ninety per cent of the output of the Belgian Congo, for instance, being suitable only for industrial purposes.

For the first half of 1938 the South African output was 64 per cent larger than in the corresponding period of 1937, but as restriction was subsequently imposed the increase for the year was comparatively moderate. The marketing and thereby indirectly the output of the principal



Keystone]
NEW CONSTRUCTION PLANT AT A DIAMOND MINE IN KIMBERLEY, S. AFRICA

producing countries continued to be controlled under a quota system by the Diamond Producers' Association, through the Diamond Trading Company, which markets about 95 per cent of the world production and sells it to brokers and diamond-cutting establishments.

For the reasons already mentioned, demand was much smaller than in 1937. Sales of uncut diamonds by the Diamond Trading Company, which had risen from £3,719,000 in 1934 to £9,151,000 in 1937, declined last year to approximately £4 millions, while the sales of cut and polished diamonds by cutting establishments (which are largely concentrated in Amsterdam and Antwerp) fell by over fifty per cent. Though there was consequently a considerable increase in stocks, prices were fairly well maintained around the enhanced levels established early in 1938, thanks to the firm control exercised by the Diamond Producers' Association and also to the existence of an association formed in 1937 for the purpose of bringing about co-ordination between the brokers, cutters, distributors, and retailers throughout the world.

The most important single cause of the decline in sales was the depression in the United States, which normally absorbs over seventy per cent of the total sales. Though the decline in demand particularly affected the gem trade, it extended also to industrial diamonds. This market, which in 1937 accounted for well over sixty per cent of the world's sales by weight, though less than 25 per cent in value, was inevitably affected by the severe recession in the engineering trades, where diamonds are now widely used for cutting and grinding. This field is being constantly extended by diamond research organizations, one of the latest applications being in the form of metal impregnated with diamond dust. (P. F.)

DIBDIN, SIR LEWIS (TONNA), British ecclesiastical lawyer, was born on July 19, 1852, and died at Dormansland, Surrey, on June 12, 1938. He was educated at St. John's College, Cambridge, was called to the bar in 1876, and took silk in 1901. He was chancellor of the dioceses of Rochester (1886–1903), Exeter (1888–1903), and Durham (1891–1903), and from 1903 until 1934 was Dean of the Court of Arches. He was an Ecclesiastical Commissioner from 1931 until his death. One of the most famous of his

decisions was that given against Canon Thompson, vicar of Eaton, Norwich, for having refused the Holy Communion to a married couple on the ground that the wife was her husband's deceased wife's sister Among his publications were *Church Courts*, 1881, *The English Church Law and Divorce*, 1912 (in collaboration with Sir Charles Chadwyck-Healey), and *Establishment in England*, 1932. Sir Lewis was knighted in 1903.

DIETETICS. The most spectacular development in 1938 is the evidence that nicotinic acid cures human pellagra (Smith, Spies, Matthews, De Langen). As the skin, mental, and digestive symptoms are relieved, in some cases neuritis remains. This is usually cured by synthetic vitamin B_1 (thiamin). As the diet of pellagrins is usually incomplete by reason of limitation due to other disease, economic factors, or alcohol, the desirability of adequate diets accompanying and subsequent to treatment with nicotinic acid is stressed by workers in this field. It is reported that nicotinic acid also cures digestive skin and nerve symptoms of young pigs which had been fed on a diet consisting largely of maize (Chick). This diet has long been used to produce experimental black tongue in dogs (Sebrell) The evidence seems clear that human pellagra as generally seen is a deficiency disease due to a lack of nicotinic acid in the diet, but that this deficiency may be accompanied by others such as that of vitamin B_1 (thiamin).

Availability of synthetic vitamin B_1 (thiamin) has made possible continuation of studies of its effectiveness in the treatment of neuritis. Its beneficial effects on the polyneuritis of alcohol addicts has been previously demonstrated; reports are now made of its relief of leprous neuritis (Badger), and that associated with gastric carcinoma (Laurent). Some cases of cardiac dysfunction with œdema have been successfully treated with this vitamin (Jolliffe).

Further evidence of the desirability of more than minimum amounts of vitamin C (ascorbic acid) is given in the marked effects on bone found in protracted mild scurvy (Ham, Elliot). The relation of the vitamin C content of tonsils and blood to the number of hæmolytic streptococci in the tonsils suggests a protective action by this vitamin (Kaiser).

A critical study of Jeans's dark adaptation method for determining vitamin A stores seems to indicate that marked deficiencies may be determined, but it is not certain that mild ones can be (Isaacs, Bocher, Bridgeman, Corlette). Xerophthalmia in infants continues to be reported (May, De Haas) where they have been fed skim milk, some whole-milk dilutions, and even a few breast-fed by malnourished mothers. At the same time no advantage is found in nutritional state or resistance to infection of infants receiving 500–1,050 I.U. of vitamin A depending on age, as compared with approximately 17,000 I.U. (Lewis). Most of the xerophthalmic infants had no vitamin A in their blood. Report is also made of dermatoses in white persons cured by vitamin A (Youmans).

The exact chemical nature of the anti-hæmorrhagic substance, vitamin K, is still unreported. However, workers in several laboratories have found that extracts of either alfalfa (Warner, Brinkhouse, Smith) or fish meal (Butt) are effective in reducing the bleeding time of patients with jaundice to normal levels in a few days (Dam).

Doubts have been cast on any special function of vitamin P (citrin, hesperidin) in guinea-pigs as distinct from ascorbic acid. Favourable clinical reports, however, continue; such as in patients with vitamin deficiencies, petachiæ were reduced by hesperidin independent of ascorbic acid in the diet (Scarborough), and citrin as effective in treatment of Henoch's purpura, after ascorbic acid had failed (Jersild).

Among research of interest on minerals, evidence is presented that growth and bone developments are improved when calcium and phosphorus salts are used to supplement human diets poor in these elements (Coward). However, these salts are recommended only for emergency use when milk is not available (Aykroyd). A sex difference in the utilization of iron is shown by storage of twelve per cent more iron by female than male rats (Rose). The dipyridyl method of chemically determining available iron is not a measure of physiological availability in experiments on anæmic dogs (Hahn, Whipple). Manganese is essential for the bone development of chicks, since both slip tendon and shortened leg bones are prevented by adequate amounts of this mineral (Gallup, Insko). Cobalt, effective in New Zealand bush sickness, also cures pine disease of sheep in the Cheviot hills (Corner).

During 1938, over 100 dietary studies and budget inquiries on diet and nutrition were reported from all over the world.

BIBLIOGRAPHY. *J Amer. Med Assoc.*, Feb 26, 1938; July 30, 1938; Aug. 27, 1938; April 23, 1938; *Lancet*, May 14, 1938; March 26, 1938, *Brit. Med. J.*, Jan 8, 1938; *J. Exper. Med.*, Feb. 1938

DIVORCE. The past year has given evidence of the working in England and Wales of the Matrimonial Causes Act, 1937, timed to come into force on Jan. 1, 1938. The test is important, because a considerable number of statutes have been curtailed in usefulness by narrow decisions in the Courts. In the case of the present Act, however, judges have on the whole given doubtful points a benevolent interpretation, and, so far as it has not been available for all those whom it was framed to benefit, the fault hardly lies with them. The question, which was much agitated in legal journals in the autumn of 1937, as to whether periods of desertion or insanity previous to 1938 could be pleaded for divorce under the Act, has been answered in the affirmative by all the divorce judges, and at least one decree absolute for incurable insanity has been granted. The Court of Appeal or House of Lords might, of course, reverse this ruling, but this does not now seem likely. Were it reversed, probably a short amending Act would be passed "to resolve doubts", for it would be unfair to grant decrees to some petitioners, and, on the same facts, withhold them from others. An important decision was made in *Herod* v. *Herod*, 54 T.L.R., 1134, [1938] 3 A.E.R., 722, a case in which the petitioner husband sued for divorce on the ground of his wife's desertion, but admitted his own adultery during the period of desertion. The Court held that that adultery was no absolute bar if the wife was ignorant of or uninfluenced by the fact. This must affect a large number of deserted husbands. Again, separation deeds are normally bars to divorce for desertion, but the Court has held in favour of a wife that. when a husband has practically disregarded such a deed and made no payments under it, the Court will also disregard it as against her. Undoubtedly, the chief difficulties which arise under the Act do so in respect of divorce for incurable insanity. Less than three insane persons in two hundred who have been under care and treatment for five years or upwards recover their sanity, but the off-chance remains, and doctors, whose evidence is indispensable, naturally hesitate to risk exorbitant claims for damages for professional negligence in testifying of incurability. Moreover, these cases are so expensive—they must of

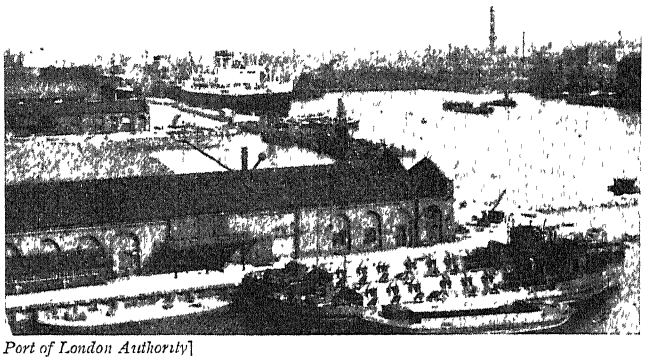
course always be defended, and £120 is a low figure—that they are out of the reach of all but the well-to-do classes Indeed, correspondence received by members of parliament and the Divorce Law Reform Union shows clearly that, notwithstanding the " poor persons " procedure, divorce is out of the reach of perhaps the majority of the population, owing to the expense A remedy suggested is the establishment of local Courts of Domestic Relations with divorce jurisdiction.

Elsewhere, possibly the most important development is the Divorce (Scotland) Act, passed on July 29, assimilating the new English law, with the reform that, in cases for divorce for incurable insanity, the Court appoints a " curator ad litem " to defend the case, and obtains a report as to the incurability from the General Board of Control for Scotland Thus the heavy expenses necessary in England are lightened. Scotland has of course admitted divorce for desertion since the Reformation.

On the Continent, General Franco, for the portion of Spain he controls, has repealed the divorce law, which was the first passed after the outlawry of King Alfonso. (A. FEL.)

United States. The committee on resolutions of the American Bar Association, at its annual meeting, refused to endorse a resolution in favour of the Capper-Dickstein proposed constitutional amendment authorizing Congress to pass uniform marriage and divorce laws. The resolution was rejected on the ground that conditions peculiar to different States should be met by State legislation. During the year one decision of great importance regarding divorce procedure was rendered by the United States Supreme Court in the *Davis* v. *Davis* case : The full faith and credit provision of Constitution means that not some but full credit must be given in each State to judicial proceedings of other States. The following grounds for divorce were recognized in individual States : Mississippi, incurable insanity ; Louisiana, continuous separation for two years or more. Ohio, moreover, passed a statute permitting the courts to take into account character and social circumstances in any divorce procedure. The divorce rate over all the United States for 1937 was 1·93 per 1,000 persons, the highest on record, compared with a marriage rate of 11·03 per 1,000.

DOCKS AND HARBOURS. In the British Isles the principal centre of constructional activity has been the capital, where the Port of London Authority is engaged on a development programme of considerable magnitude estimated to cost, in its entirety, some twelve millions sterling. During 1938, they have had in hand, more particularly, a much-needed re-modelling of the Royal Victoria Docks, one of a group of three important docks known as the Royal Docks. The Royal Victoria Dock is the oldest of the three, having been constructed as far back as 1855. Of the other two, the Royal Albert Dock dates from 1880 and the King George V Dock from 1921. The Royal Victoria Dock, as originally designed, was irregular in outline, and, on its northern side, comprised a series of four short jetties, or piers, of solid construction, surmounted by double-storey brick warehouses, having basement vaults ; while between these piers were added later several timber jetties of lighter construction. With lengths of only 450 ft., or less, the brick piers and timber jetties have become too short for modern vessels ; accordingly, they are being removed and a new north quay is being constructed with a total length of 3,250 ft. in a continuous straight line, offering no impediment to the berthage of ships of any length. The south quay has already been reconstructed for a length of 1,750 ft. The bottom of the dock is being deepened by dredging to



Port of London Authority]
ROYAL VICTORIA DOCKS. THE NEW NORTH QUAY IN COURSE OF CONSTRUCTION

give a depth of water of 31 ft., which is more in accordance with modern requirements. The passage leading to the Royal Albert Dock has also been deepened and a new quay frontage provided on the north side of the Royal Albert Dock, a length of 5,450 ft., affording berthage in 34 ft. of water The programme of improvements includes the modernization of the India and Millwall Docks and a number of minor improvements and additions to the London and St. Katharine Docks, the Surrey Docks, and the Tilbury Docks. The river channel is also receiving attention.

At Liverpool, the Mersey Docks and Harbour Board are engaged in reconstructing the entrance to the West Waterloo Dock with a new lock, 450 ft. long and 65 ft. wide, which will enable coasting vessels drawing up to 17 ft. of water to enter and leave at almost any stage of the tide. A new fish quay at Sunderland, 300 ft. long with 20 ft. depth of water alongside, is practically completed and ready for use. Deepening of the harbour and the channel of the Wear is in hand. At Cardiff an additional general cargo quay, approximately 1,000 ft. in length, is in course of construction in the Bute East Dock. Quay reconstruction is also in progress at Glasgow, and an important addition to the Meadowside Granary at the Rothesay Dock has just been completed. This granary is now among the largest in the kingdom, having a storage capacity of 46,000 tons. At Leith, two new breakwaters are being formed to enclose a considerable area outside the limits of the present harbour, which is now too restricted in extent. Part of the area (about 32 acres) will be reclaimed and the remainder will be dredged.

The year 1938 was specially notable at Southampton as the centenary of the dock system at the port, the foundation-stone of the first dock (originally called the North-East Dock, but now known as the Outer Dock and used exclusively for the cross-Channel steamers of the Southern Railway Company) having been laid with masonic honours on Oct. 12, 1838. From a comparatively insignificant shipping centre, Southampton has risen to the position of premier ocean passenger port of Great Britain, with 32 shipping lines connecting its services with 160 of the world's largest ports. The unveiling of a monument marked the centenary celebrations. There has been considerable development of Southampton harbour as an air base for the Imperial Airways Empire flying boat services, and a stretch of water, one mile in length and 1,200 ft. in breadth in Southampton Water, has been surrendered by the Harbour Board to the Air Ministry for use as a terminal for the Empire air service.

Accommodation for aircraft has also been provided at Belfast harbour where, in March last, Mrs. Neville Chamberlain inaugurated a new aerodrome and airport. An ex-

tension of the Eastern Quay at the Pollock Dock is in hand. At Dublin there has also been continued activity in the extension of the North Quay, the Alexandra Quay, and the East Wall Reclamation Scheme.

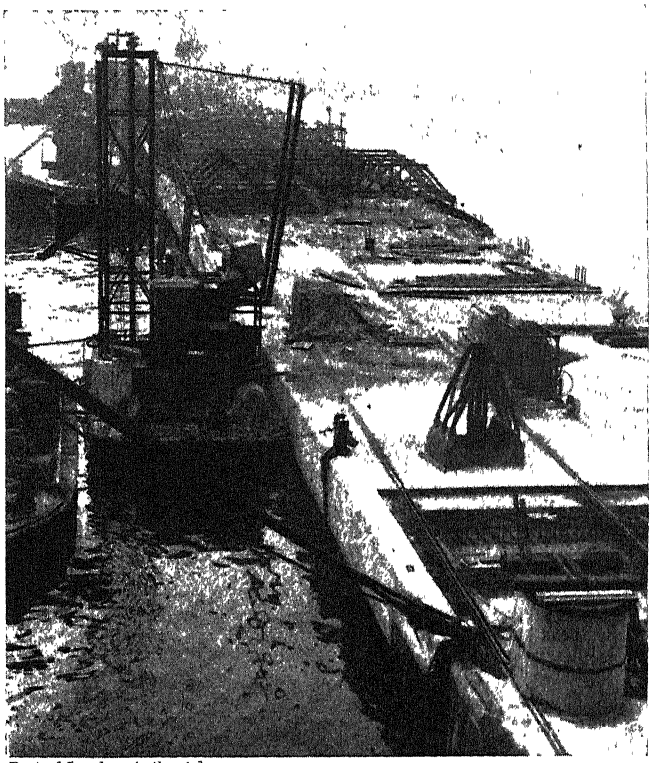
France. Various works have been in progress during the year at French ports, notably at Marseilles, where an important scheme of port extension is making good progress In the Bassin de la Joliette, three new oblique jetties have been constructed, together with two new outer breakwaters and the demolition of the former "major traverse". The depth of the basin has been increased to 28 ft A large terminal marine passenger station has been provided on the East Quay for the service of the boat trains. At Bordeaux, the deepening of the entrance channels is in hand with a view to meeting the requirements of a new ocean-going liner, the "Pasteur", which is expected to be in service during 1939 River-deepening operations are also in hand in the estuaries of both the Seine and the Loire. The former of these is an undertaking of considerable importance, estimated to cost a milliard of francs. Further accommodation for overseas traffic is being provided at La Rochelle–Pallice, where a landing quay outside the port of La Pallice has reached a length of over 200 lineal yards, and is being extended to its contemplated length of 330 yards New outer breakwaters are in course of construction at Boulogne; and at Dunkirk a large new entrance lock, 984 ft. long, is at the point of completion.

Italy. In Italy, constructional operations have been in hand in various ports, notably at Genoa, where the new graving dock No. 4, which has a length of 918 ft. capable of extension to 1,150 ft. and a width of 130 ft., is in an advanced stage. The dock is being constructed on a novel principle, by means of a series of hollow pontoons for the side walls which have been floated into position in the harbour and sunk to the required foundation level. At Venice, also, there has been activity in connexion with the development of the industrial port of Maghera. At Naples, another new graving dock, 1,052 ft. long, extensible to 1,284 ft., with an entrance at each end, is in course of construction.

Scandinavia. Miscellaneous programmes of harbour extension works are in progress at various ports in northern Europe, including Helsingfors, Åbo, Stockholm, Gothenberg, Aarhus, and Copenhagen.

Canada. Work in Canadian ports is necessarily concentrated within the slack season for shipping, and during the winter months at the beginning of the year, the National Harbours Board of Canada carried out the reconstruction of the eastern face of the Alexandra Pier at Montreal. This has meant the formation of a length of some 1,260 ft. of new wharfage, which is destined to provide in the centre of the harbour a terminal for the largest liners using the port. The cost of the work runs to over a million dollars (£200,000).

South Africa. One of the most notable constructional enterprises of recent years is that now being undertaken at Capetown, South Africa, where, in place of a much smaller existing enclosure, which has proved inadequate, a great new basin is being formed for shipping with a water area of 290 acres. This new scheme will, in its entirety, including a considerable area of reclamation of the foreshore, involve an outlay of over six millions sterling. At the present time, a massive mole, forty ft. in width, is being formed across Table Bay, to constitute the outer enclosure on the eastern side of the basin, replacing an existing random rubble mound. The new mole is being constructed of steel sheet piling, with a core of sand filling, for a length of 4,050 ft. to its junction with an arm of concrete pile work extending



Port of London Authority]

IMPROVEMENT WORK AT THE ROYAL VICTORIA DOCK, SHOWING BUILDINGS TO BE DEMOLISHED AND THE NEW QUAY TO THE ROYAL ALBERT DOCK UNDER CONSTRUCTION

outwards for a distance of 2,500 ft. from the Woodstock end of the bay. The mole is to serve as the skeleton for a future quay, prior to the completion of which about a dozen short or "stub" jetties, where ships can be moored in emergency, will be provided on the inner side. It is expected that the length of sheet-piled jetty will be completed early in 1939. Included in the scheme is a huge graving dock, some 1,200 to 1,300 ft. in length, estimated to cost a million pounds, to be constructed within the reclaimed area. In addition, there is a considerable quantity of dredging work to be done, both in sand and rock. The enterprise was inaugurated on the night of May 10, when the Prime Minister of the Union of South Africa, General Hertzog, set in motion the machinery of a dredger to the accompaniment of the switching-on of a thousand electric lights outlining the new harbour area. (B. Cu.)

In the United States, approximately 1,000 river and harbour projects were in force on June 30, 1938, and active operations were under way on over one-third of the total.

The more important projects recently approved by Congress include dredging of the channel in Delaware river to increase the project depth from 35 to 40 ft. between Philadelphia, Pa., and the sea; increase in project depth of that part of the intracoastal waterway between Savannah, Ga., and the St. John's river from eight ft. to twelve ft. to conform with that part of the waterway between Norfolk, Va., and Savannah, Ga.; enlargement of the turning basin at Port Everglades, Fla., to relieve congestion in that growing port; widening the channel in the Mississippi river at New Orleans, La., and between New Orleans and Baton Rouge, La.; extension of channels and turning basin at Corpus Christi, Texas, to accommodate the increasing commerce of that port; widening and deepening channels of the Sabine-Neches waterway in Texas to improve navigation to the cities of Port Arthur, Beaumont, and Orange.

DOMINICAN REPUBLIC, a West Indian republic occupying the eastern two-thirds of Hispaniola; language, Spanish; capital, Ciudad Trujillo; president, Dr Jacinto B Peynado. Area 19,325 sq. miles; population (1935 census) 1,479,417, official estimate 1,581,248 in 1937, predominantly mulatto and Negro, but whites are politically important The chief cities are· Ciudad Trujillo (formerly Santo Domingo), the oldest European-founded city in America, 71,297, and Santiago de los Caballeros, 33,919 In January 1938, a pact with Haiti was signed adjusting the difficulties between the two countries which had arisen in 1937 Under its terms Haiti was given an indemnity of $750,000 (*see* HAITI). In May, Dr Jacinto B Peynado was elected without opposition to succeed Rafael L Trujillo Molina, president since 1930, and was inaugurated on August 16. The republic has good external communications by steamship and air; there are 166 miles of government-owned railway, supplemented by a highway network of 873 miles In addition 610 miles of railway are in use on sugar estates.

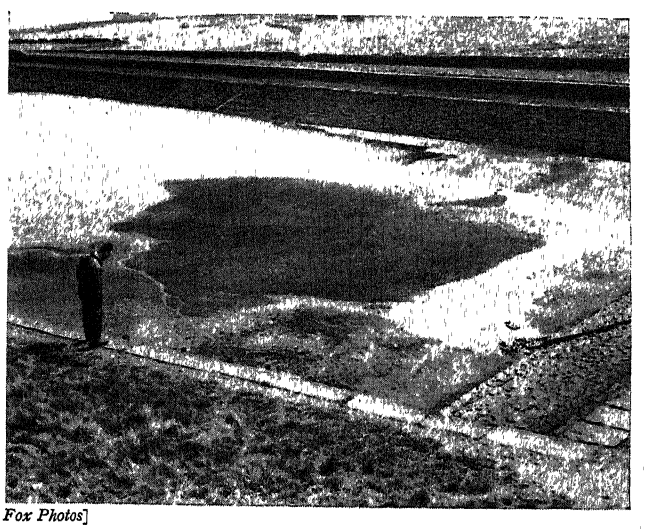
Imports in 1937 totalled $11,691,896 (principally textiles, machinery, and structural materials), a 21 per cent increase over 1936, from the United States (52·3 per cent), Japan (13 per cent), Germany (8 per cent), and Great Britain (7 per cent). Exports increased 19·7 per cent in 1937, totalling $18,128,732, the highest value since 1930, and went largely to the United States (32·7 per cent), Great Britain (31·8 per cent), and France (13·7 per cent). Exports for the first nine months of 1938 were valued at $13,368,998, a decline of 20·6 per cent. The Dominican Republic is primarily agricultural, with sugar the most important crop, and cacao, in which it ranks fourth in world production, second. The monetary unit is the peso, equal in value to the U.S dollar. Fiscal control is in the hands of a financial adviser and general receiver of customs nominated by the President of the United States. In 1937 there were 900 public and private primary and secondary schools, with an enrolment of 113,530. (L. W. BE.)

DONATIONS AND BEQUESTS. Lord Nuffield's benefactions in Great Britain included £80,000 for Guy's Hospital Nurses' Home, and £50,000 to the Boy Scouts' Association, both upon terms; £60,000 to Birmingham University (for Physics Block); £50,000 each to the Territorial Association Sports Fund, and to the London Students' Union for building, £25,000 for Student Movement House; £20,000 to Banbury Hospital; £10,000 to London Hospital; and five thousand "iron lungs" for hospitals throughout the British Empire. Hospitals benefited included Great Ormond Street (C. P. Johnson, ultimately £75,000), Guy's (Mrs. E. L. Stroyan, £10,000, F. Lindo, £75,000), London (J. H. Stephens, £10,000), Royal Cancer (A. C. Beatty, £50,000 for research), St. George's (H Oakes, £80,000), and St Mary's (J. H. Stephens, £10,000), Bishop's Stortford (Mrs. Stroyan, £10,000), and Swansea (Capt B. H. Freeman, £15,000). Other legacies were received by Clacton (St. Michael's Crippled Girls' Home, £10,000, by Miss W. M. B de la Chere), and Liverpool (Council for Social Service, by A. B. Earle; Orphanage, £17,000, by J. W. Dart). Mr. and Mrs. Haughton gave £25,000 to N Staffs. Infirmary. Educational bequests were made to the following universities: Cambridge (the University, classical archæology, by Dame M. G. Sandys; King's, drama, by Miss Gertrude Kingston; Pembroke, divinity, by J. I. C. Boger, also Rev. C. G. Wilkinson); Edinburgh, medical-surgical research, by J. Risk; Oxford (the University, Egyptology, etc., by Mrs. N. Griffith; Balliol, by P. Hide; Queen's, zoology, by E. T Browne). Epsom College received £20,000 (reversion) from H. B. Densham; Sevenoaks Grammar School, £75,000 (ultimate) from C. P. Johnson To reduce the National Debt, A. J. Grave left £150,000, J. M. Brown, £25,000, and J. Dennistoun, £20,000.

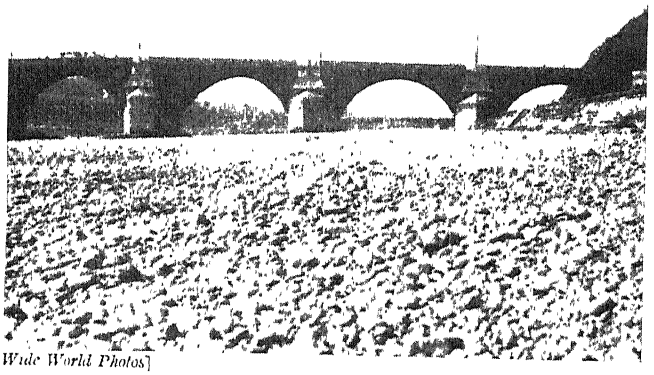
Bequests to museums included· British Museum (Lord Rothschild, zoological specimens, books, and Tring museum), London Library (Dr. C J. Goldsmid-Montefiore, pamphlets), National Gallery (R. H. Williamson, pictures), Victoria and Albert Museum (Duke of Norfolk, panelling, etc., from Norfolk House). To Coventry, Sir A Herbert gave £100,000 for art gallery, etc.; to London (Tower Hill Fund), Lord Wakefield gave £32,000; to Stratford-on-Avon, P. Baker perpetuated Hathaway Farm as a pleasure-resort; and to the Welsh Nation, C G Treherne, Duffryn House, near Cardiff In Africa, Miss F. C. Peace left £7,000 to Durban Government Hospital and Lord Nuffield gave £100,000 for orthopædic services; in Australia, H. Spensley, bronzes, etc, to the government of Victoria, also Bedfordshire Mansion for the use of the High Commissioner of Australia in London, and Sir C. McNess, £10,000 to the Presbyterian Church in Western Australia (*See* also FOUNDATIONS AND TRUSTS) (H Fw.)

United States. The number of newly established foundations, endowments, and trust funds organized for the benefit of the public continued to grow during the year. Complete information is nowhere available as to the total now chartered, but they run close to 290. Large bequests announced in 1938 include: a trust fund of $2 millions for the Art Institute of Chicago, and $1 million for a memorial in Chicago to Alexander Hamilton, both given by Kate S. Buckingham of Chicago; about $1 million given to Harvard University by Mrs. Agnes Wahl Nieman of Milwaukee, to provide fellowships for experienced newspaper men; $1 million for research in and treatment of diabetes, given by Emelie Renziehausen of Pittsburgh; $1 million to benefit undernourished and underprivileged children, by Charles H Hood of Massachusetts; and $750,000 given by William H. Crocker of California, the income to be devoted to religious, charitable, and educational purposes.

DROUGHT. Each continent of the earth has within its boundaries one or more regions of such geographic position and topography that they are normally subject to periods of aridity or semi-aridity. In these regions droughts are not unexpected, although they vary in fre-



Fox Photos]
THE SNAPE RESERVOIR AT HOLMFIRTH, YORKS, DURING THE SPRING DROUGHT, 1938



Wide World Photos]

THE RHONE BED AT LYONS ALMOST DRY, MAY 21, 1938

quency, duration, and intensity Drought, however, frequently strikes regions where prolonged periods of dry weather are neither normal nor expected

During 1938, droughts were not unusually severe or widespread in regions of normal drought expectancy but did cause considerable damage in areas where dry weather is of infrequent occurrence. Rainfall shortage over most of the earth's surface was most acute during the early spring and during the month of October.

Throughout the British Isles, drought conditions were especially acute in the early spring. During the three months ending on April 1, rainfall was 58 per cent below normal. This unprecedented shortage caused extensive damage on farms in England and Wales. Heavy rains coming in early May were offset by a succession of frosty nights during the latter part of the month.

All crops were below average. The blight was particularly severe in the fruit-growing sections. In Lincolnshire the strawberry crop was almost wiped out, while the yield in Hampshire—less than a quarter of the normal crop for this county—was the lightest in the history of the industry. Pastures were so thin that hundreds of sheep died for lack of food and farmers were forced to sell their animals or graze them in wheat-fields.

Most of Europe suffered to some degree from the effects of the abnormally dry spring. Harvesting, especially of spring grains, was delayed in almost all countries on the Continent.

Moisture shortage was critical in the Scandinavian countries and in the northern part of France, where growing grains were rather badly damaged. Switzerland experienced an unbroken period of 70 rainless days.

Rains which broke the drought over most of the Continent in late May and early June effected a marked recovery in the wheat crop in Italy where a twenty per cent to forty per cent decrease in total crops had been anticipated. Serious damage was done, however, before the drought was broken.

In the Mediterranean basin a combination of heat and drought during the summer months affected grain and fruit yields, particularly durum wheat in Algeria and Tunisia, wheat and barley in French Morocco, and the fig crop in Turkey. Unusually dry weather was also prevalent during July and August in both Bulgaria and Rumania.

In almost all parts of the U.S.S.R. the growth of winter grains was retarded by deficient snowfall and lack of ground moisture during the winter months. Spring cereals also suffered in the east and south, and in the important spring wheat section of Asiatic Russia, because of extreme heat and drought that lasted from the early months of the year through late summer. Hot, dry winds shattered the grain, pastures were damaged severely, and the year's hay crop was considerably below normal.

Rainfall was also scarce in India during the spring and late autumn. The Union of South Africa banned the export of corn and sugar early in the year because of serious drought conditions which delayed planting and made the outlook for the year's crop production uncertain.

The latter half of the year was generally dry in Australia, and heavy rains in July were too late to produce more than a mediocre stand of wheat in the west. By November, forage supplies were so depleted that it was necessary to cut some wheat acreage for hay.

Moisture conditions over most of the western hemisphere were much better in 1938 than in 1937. The Canadian prairie provinces suffered little from the lack of rain. Good growing conditions prevailed generally throughout the United States until autumn, when a severe and widespread drought extended from the Appalachian to the Rocky mountains, bringing early seeding to a standstill and causing sharp deterioration of late-planted grain in many sections. Rain and snow early in November ended the dry period.

Spring droughts in Cuba, Puerto Rico, Bermuda, and the Bahamas were broken in June after fruit and vegetable crops had been injured. Drought was not an acute problem in South America. In the Argentine, the 1938–39 wheat yield was expected to be the second largest in the country's history. Conditions in late 1937 and the early part of 1938, however, produced a severe shortage in the 1937–38 harvests of grain, corn, flax, and cotton. (*See* also DUST STORMS.)

DRUGS AND DRUG TRAFFIC. Two main questions have been dealt with by the League of Nations:

(i) *The limitation of poppy cultivation.*—The Advisory Committee began to prepare for the limitation of the raw material of opium and its alkaloids. Poppy cultivation is not limited in relation to world consumption, though some states, such as India, Turkey, and Yugoslavia, produce under government monopoly. The world's annual needs, as legally recognized, are some 300 tons of opium for narcotics, 300 for opium-smoking monopolies, 500 for eating. In 1936, 2,300 tons were produced, and 3,500 tons were in stock, not counting China and Afghanistan. The committee proposed that poppy growing for opium, and raw opium, should be limited, and poppy plants, used to make alkaloids in Hungary and Poland, should be controlled. Importing countries should estimate for their needs; producing countries should limit their production to the amount allocated by an international authority. The method of allocation remained for a conference to settle.

(ii) *The Far-Eastern situation.*—China, the United States, and Canada brought accusations of encouraging drug-traffic against the Japanese authorities in China. The "Manchukuo" monopoly increased poppy growing in north China, imported opium from Iran and Korea, and allowed unrestricted sale. The Harbin authorities reported 1,500 drug-poisoned corpses picked up in the streets in seven months of 1937. Tientsin was the world centre of heroin-traffic. Egypt cited 181 towns of Manchuria and Jehol with 12,000 licensed opium and heroin dens. The United States said one gang imported 650 kg. of heroin

from Tientsin to America, two-thirds the annual medical needs of the world. The traffic at Shanghai was controlled, on behalf of the Japanese army, by a colonel. Portuguese Macao was serving as the entrepôt for illicit opium from Iran. Japan denied all these allegations. The League Committee and the Assembly were not satisfied, and protested to the Japanese government This situation endangers the world control of dangerous drugs.

(F. WHI)

DUHAMEL, GEORGES (1884–), French writer, of whom a biographical notice will be found in the *Ency. Brit*, vol. 7, p 719. The son of a doctor, he took a medical degree in 1909, was married in the same year to Mlle Blanche Albane, and has three sons. His *Civilisation* (1918), in which many of his war impressions are recounted, gained him the Goncourt prize, and from 1919 onwards he devoted himself entirely to the profession of letters, travelling extensively, lecturing in Russia in 1927, and in the following year in North America, the latter visit giving rise to *Scènes de la Vie Future* (Grand Prix Académie Française, 1930). Director of the *Mercure de France* from 1935 until 1938, he has been a member of the Académie de Médecine, and president of the Alliance Française since 1937, the year he received the title of Docteur Honoris Causa from Amsterdam university. One of the foremost living writers, Georges Duhamel may be described as the Balzac of modern French letters—indeed, some of his characters have already become almost as well known and beloved in France as those of his famous predecessor Among English translations are: *America the Menace*; *News from Havre*; *Young Pasquier*; *In Sight of the Promised Land*; *Salavin*; and *In Defence of Letters* (1938). In January 1938 he published *Au Chevet de la Civilisation*, and in October the seventh volume of the Pasquier series, *Cécile parmi nous*.

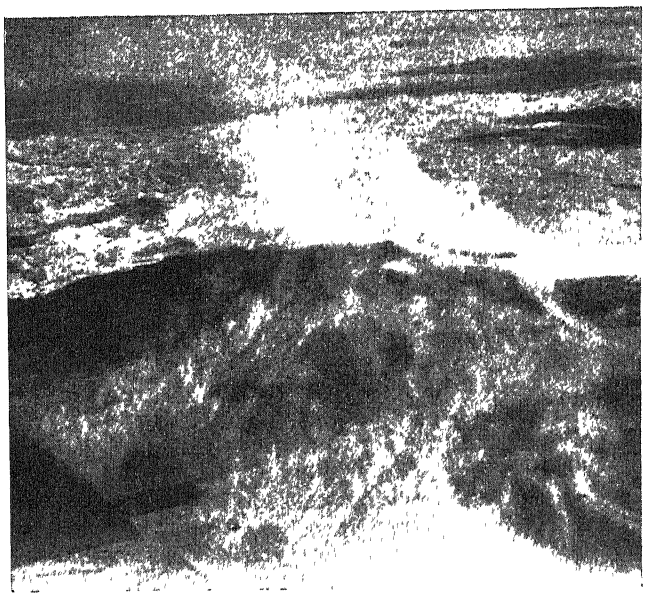
DUST STORMS may or may not represent land damage, according to their source. In inhabited regions, they are likely to be the manifestations of soil erosion by wind on agricultural land. In generally uninhabited regions, such as deserts and scab lands, the dust storms may represent only the aerial redistribution of soil particles from one locality to another, without any particular attendant damage. Wherever they occur dust storms are a symbol of aridity and a corollary of drought, for dry, powdery soil or sand is a prerequisite of a dust storm.

In arid or semi-arid agricultural regions, such storms tend to follow the removal of vegetation which normally protects and ties down the soil. In desert regions and other areas of arid climate and scant vegetation, the storms are virtually seasonal occurrences. In regions of either type, however, they vary with the velocity of the wind and the intensity of drought. Thus, a combination of unprotected dry soil, wind, and prolonged aridity normally may be expected to produce a dust storm.

On the North American continent, where some of the world's most severe and damaging dust storms have occurred in recent years, soil blowing during 1938 was comparatively mild.

The Northern Great Plains of the United States and the prairie provinces of Canada suffered little from high winds, largely because of improved moisture conditions.

In the so-called "Dust Bowl" region in the Southern Plains of the United States, soil moisture was considerably below normal over the winter and numerous severe dust storms occurred early in the spring. During May, however, abundant precipitation fell over most of the "Dust Bowl" region and soil blowing was not severe from that time on,



Wide World Photos]

AERIAL VIEW OF DUST STORM TAKING UP THE TOP SOIL OF MONTANA FARM LANDS

although occasional minor dust storms caused some hardship throughout the year. At the close of 1938, this region was in its best condition since 1933, due to favourable moisture conditions and a greater density of vegetative cover.

In June, Japan's Hokkaido island experienced one of the most severe dust storms in its history. Some 75,000 acres of land were covered with an inch of sand and silt, and approximately 80 per cent ruined for harvesting. On April 16, a dense sandstorm delayed all shipping in the Suez canal. India's customary blowing periods preceded and followed the south-west monsoon.

During the spring drought in the British Isles, clouds of dust blew across the Yorkshire plains; and in some parts of Scotland, notably at Montrose, visibility was reduced as far as the coast. Four inches of soil covered roads in some sections, and soil drifts a foot or more in height were reported

The northern half of the Anglo-Egyptian Sudan, the Sahara, and other arid or desert regions of Africa again experienced severe sand and dust storms, though these were not unexpected, since such storms have become periodic in these regions.

In other parts of the world less severe and less frequent dust storms were reported, their intensity and frequency varying with the intensity of drought and the degree of agricultural activity. Length of agricultural occupation is almost invariably a determining factor in the potentiality of dust storms in a given drought region. (*See* also DROUGHT.)

DUTCH LITERATURE. Since the revival of Dutch poetry about 1880 the lyric has been flourishing in the Netherlands. This lyrical gift is remarkable in a people often, and in many respects justly, called level-headed. The combination of level-headedness and lyric talent is a quality which the Dutch people have in common with the English. One may probably account for this apparent contradiction by considering the self-restraint, characteristic of so-called phlegmatic peoples, which particularly enables them to control their human emotions perfectly, compelling and perpetuating these in words and imagery, without falling into either extravagance or pathos. The dynamic

power of the inspired imagination is complemented or tempered, as the case may be, by a strong sense of reality.

In the year 1938 Dutch literature suffered the loss of its oldest and finest lyric poet, Willem Kloos, who, nearly eighty years old, was honoured by both the younger and older generation in the land as the ardent poet of immortal sonnets in his youth. These sonnets were, after such an impetuous outburst, never quite equalled by his later work, but nevertheless remained sufficiently impressive to ensure him enduring fame as the most passionate Dutch lyric poet and the renewer of modern Dutch literature. Every later poet owes, either directly or indirectly, something of his development to Kloos' formative influence.

Important events were the two monumental publications which appeared in 1938. In the first place there was the collected work, in two volumes, of a younger contemporary of Willem Kloos, Albert Verwey, who devoted his life as poet, thinker, literary historian, founder of several journals, and in his later years as professor of literature in Leyden, to a continual and grand defence of poetry, at all times fulfilling a leading part in the intellectual life of his people. Secondly may be mentioned the provisionally collected work in three volumes, poetry, prose, and critical studies, of H. Marsman, a romanticist who is inspired by a strong vitality and the desire to live really freely and greatly. Now almost forty years old, he is still a stimulating example to younger poets.

In preparation are the collected poems of an early deceased contemporary of Marsman, Jan Slauerhoff, who as ship's surgeon, sailing the seven seas in his work, both lyric and prose, was a type of the "pilgrim of eternity". Of the lyrical poets, now in the fifties, who this year enriched Dutch poetry, special mention may be made of A. Roland Holst, J. C. Bloem, and M. Nijhoff. A younger generation established at the beginning of the new year their own journal, *Werk*, of which one may justly foster expectations.

A great number of novels were also published in 1938. In this connexion the following authors especially distinguished themselves: the sober and, *par excellence*, Dutch narrator, Arthur van Schendel, whose novel *Het Fregatschip Johanna Maria*, published a few years ago, is also known in an English translation; the productive younger writer S. Vestdijk, who has in recent years interested himself in the historical novel; and the tense and austere stylist F. Bordewijk, with a recent novel *Karakter*. Further may be mentioned the harrowing yet intensely concise work of the Fleming Elsschot (*Het Been*), and the vivid rural novels of A. Coolen and Th. de Vries. The younger generation excels, not only in lyrical poetry, but also in the dialectical essay, in which it actively takes part in the discussion of the future of European life and thought. Of interest in this connexion is the in many respects complementary work of the "independent" Menno ter Braak (*Van Oude en Nieuwe Christenen*) and that of the Catholic writer Anton van Duinkerken (*Verscheurde Christenheid*). (A. D.)

DYESTUFFS. The world production of dyestuffs shows a steady increase over a period of many years. This increase may have received a check in 1938, due to a general falling off in trade activity, but unfortunately complete figures are not available for that year or even for 1937. The following table, however, gives a good picture of the trend of events from 1925 to 1936. The total figure for 1936 is incomplete, as it does not include a few countries, such as Italy, which have a small production of dyestuffs.

The production of Great Britain in 1937 was 28,243 tons, showing an increase over 1936. Germany's production

Production of Dyestuffs, 1925-36

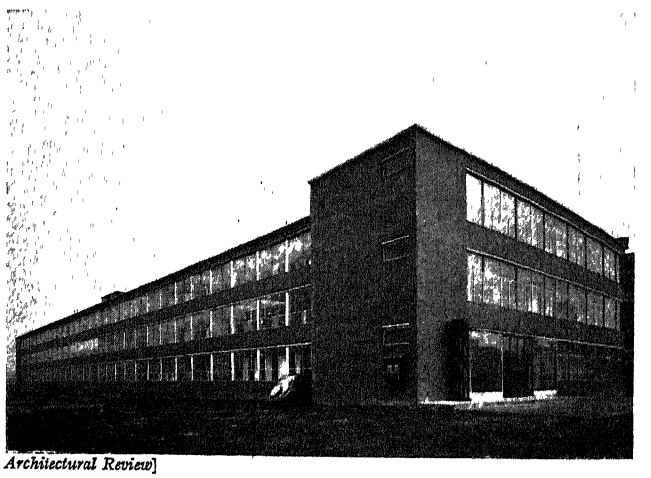
Country	Production in tons	
	1925	1936
Germany	72,000	73,828
United States	38,000	53,229
Great Britain	15,000	27,323
France	16,000	12,210
Switzerland	9,000	7,503
Other Countries	15,000	—
Japan	—	19,065
Soviet Russia	—	25,594
Totals	165,000	218,752

remains comparatively stationary; the most significant figures in the table are the rapid growth of Japan and Soviet Russia as dye-producing countries and the expansion of British and American production. It is to be noted, however, that the products of Japan and Russia are largely the cheaper, less difficult dyes; and that the Swiss production, though comparatively small, consists largely of high-grade specialities, for export. The following table gives the export figures of the principal producing countries for 1936

Exports of Dyestuffs, 1936

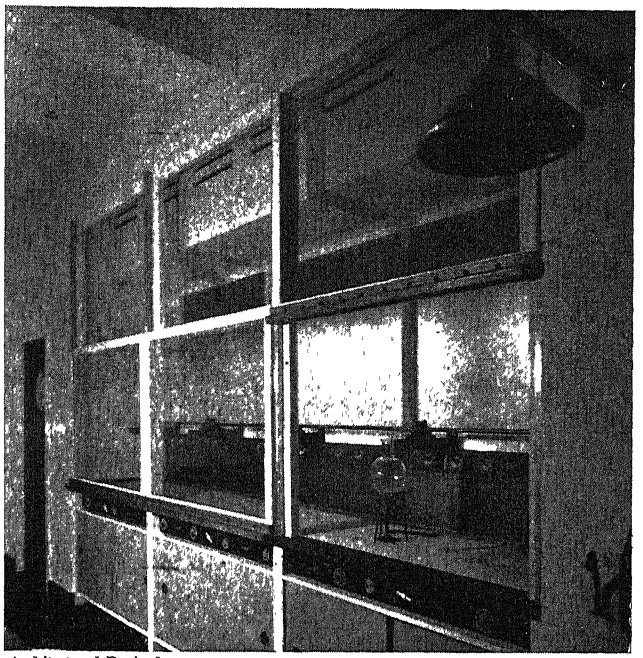
Country.	Tons.	Value.
Germany	33,203	RM.135,092,000
United States	7,771	$6,080,735
Switzerland	7,766	Frs.74,588,697
Japan	6,999	Yen.5,990,178
Great Britain	5,143	£1,236,901

The record of progress in the synthetic dyestuff industry is given, however, not by production figures, but by the new and improved dyestuffs made available by intensive research. The leaders in this respect are the big dyestuff firms of Germany, Switzerland, and Great Britain, and a large number of patents are secured every year by these firms for the manufacture of new dyes. Research is mainly directed to securing a greater degree of fastness in colouring matters to the various processes and agencies to which dyed goods are subjected. Most attention is being paid at the present time to the development of dyes from anthraquinone and other polycyclic systems, and to azo dyes of special types. The German I.G. (Interessen Gemeinschaft Farbenindustrie A.-G.) have added several new members to



Architectural Review]

THE NEW RESEARCH LABORATORIES FOR THE DYESTUFFS GROUP OF IMPERIAL CHEMICALS, AT BLACKLEY, MANCHESTER



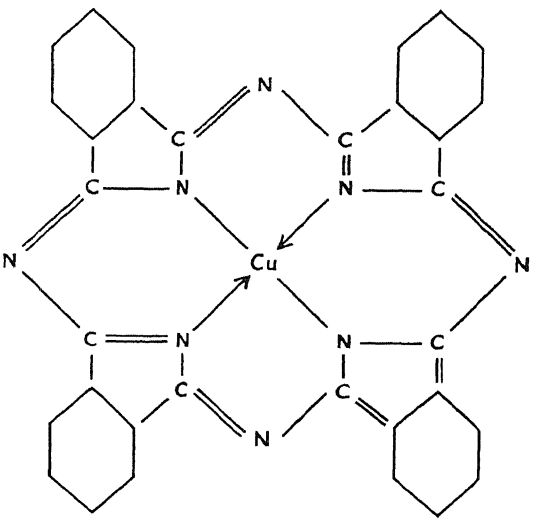
Architectural Review]

A FUME CUPBOARD AT THE BLACKLEY LABORATORIES, MANCHESTER, WITH WIRED SAFETY GLASS AND OUTSIDE CONTROLS SET BACK TO AVOID INTERFERENCE

their Indanthrene range of fast vat dyes in the past year, and the Society of Chemical Industry in Basle have likewise extended their range of Ciba and Cibanone dyes. Imperial Chemical Industries of Great Britain have introduced a new range of very fast dyes for wool, having hitherto unknown fastness to washing and to light, called Carbolan dyes.

There is also great activity in developing the so-called ice colours for cotton, these colours being formed by coupling a phenolic compound on the fibre with a diazo compound. Up to recently the phenolic component used was always a derivative of 2-naphthol-3-carboxylic anilide, giving a limited range of shades, but recently the use of other ring systems than napthalene, *e.g.* carbazole, has been tried with success, especially for brown shades. Much attention is being given to the improvement of dyes for rayon, especially acetate rayon, and recently I C I. have introduced a new range of water-soluble dyes—Solacet dyes—for this purpose. Before this innovation, the best dyes for acetate rayon were insoluble and had to be applied from a fine dispersion.

The most spectacular development of recent years is the discovery of the Phthalocyanine pigments by I.C.I. and R P Linstead. These are of an entirely new chemical class. The first member put on the market was Monastral Fast Blue BS, which has the following structure :



This is the fastest blue organic pigment known, and it has now been supplemented (1938) by a green—a chlorinated derivative—of equal fastness. New developments of this series of dyes may be expected.

See *Annual Reports of the Progress of Applied Chemistry*, pub. by the Soc. of Chem. Industry, London. (E. H. R.)

DYSON, WILLIAM HENRY, Australian cartoonist, was born at Ballarat, Victoria, in 1883, and died on Jan. 21, 1938. After working for the *Melbourne Punch* and the *Sydney Bulletin*, he came to England, and established his reputation with his political cartoons for the *Daily Herald*, in which the great vitality of his draughtsmanship and of his political leanings were alike exhibited.

E

EAR, NOSE, AND THROAT, DISEASES OF. Of recent years many important advances have been recorded in the diagnosis and treatment of diseases of the ear, nose, and throat. The following are of particular interest because of the frequency with which they are encountered in all parts of the world.

Deafness. The introduction of the wireless valve in miniature form has resulted in a very great improvement in the performance of hearing aids. A modern valve-amplified aid incorporates miniature valves, small storage batteries, and is easily portable. It is capable of amplifying with reasonable accuracy all speech sounds, and in some cases can transmit sounds as high as 8,000 cycles per second. This class of aid has been shown to be suitable for all types of deafness, and its continued use may, by exercising the hearing apparatus, hinder the progress of the deafness. P. M. T. Kerridge has described the way in which a hearing-aid clinic for hospital patients can be administered, and has given a lead that can, with advantage to the hard of hearing, be followed by other hospital centres.

Recent reports by G. Holmgren and M. Sourdille indicate that in progressive deafness due to otosclerosis great improvement in the hearing can be expected from operative treatment. A small window is made in one or more of the bony semicircular canals, and whilst this window remains patent, the improvement in hearing is maintained and the accompanying head noises may be relieved. So far it has not been possible to prevent new bone from gradually forming and closing the window, and until this can be done a guarantee of permanent improvement in the hearing cannot be given.

The increase of noise that appears to be an inevitable accompaniment of this age of mechanization may result in premature deafness for those who are frequently exposed to noises of high intensity. In an excellent review of the subject, C. C. Bunch has described the results that have been noted in testing the hearing of workers in noisy occupations. Such workers show a loss of hearing, especially for high tones, and the time may not be far distant when they may be required to wear some form of noise-insulating apparatus whilst at work.

Nasal Catarrh. This term is generally used to describe the principal symptoms of nasal disease, namely, nasal obstruction and nasal or post-nasal discharge. Such symptoms are usually the result of irritation or infection of the mucous membrane lining the nasal passages. Irritation is caused by the nasal mucous membrane being sensitive to certain forms of dust particles in the inhaled air. Allergic rhinitis is the term generally used to describe the cases due to irritation, and this includes hay fever, vasomotor rhinitis, paroxysmal sneezing and rhinorrhœa and many of the cases of variable nasal obstruction. Treatment is directed either towards removal of the irritant or towards rendering the patient less sensitive. The exciting agent, whether it be inhaled (dust) or ingested (food), may be avoided, or, as this is often not possible, repeated injections of small quantities of the irritating dust or offending article of diet may desensitize the patient. The predisposing factor of sensitiveness may be attacked by treating the sensitive nasal mucous membrane. Cauterization, submucous injection of sclerosing fluids, and zinc ionization all have their advocates, and one or other measure may be employed in conjunction with general measures when removal or neutralization of the exciting factor is not effective or possible. An exhaustive monograph covering every branch of the subject has recently been published by F. K. Mansel.

The chief example of infective rhinitis is the common cold, and it is to this that most of the remaining cases of infective rhinitis owe their origin. Strong evidence has been brought forward by Docker and others to show that the common cold is primarily due to an unknown virus. This alters the bactericidal power of the nasal mucus (Hilding), and thus enables any pathogenic organisms that may be present in the neighbourhood to gain a foothold and cause a secondary infection. It is this secondary infection that causes the complications, not only locally in the nose, but also in the lower part of the respiratory tract. The problem of the common cold is then a double one, namely, the avoidance of the virus infection and the prevention of the secondary infection. In conditions of modern civilization with its overcrowding, the avoidance of the virus does not seem possible. The secondary infection can be largely modified by active measures in the primary stage, and also possibly by building up a resistance to the secondary infecting organisms by means of a vaccine, and ensuring an adequate supply of vitamins.

Nasal polypi may result from irritation or infection, and are frequently the result of both factors being present in the nose simultaneously. They are treated by removal, and unless the polypus-bearing area is thoroughly eradicated they may recur. In order to lessen the chance of recurrence, Lyons suggested that small quantities of radium should be applied to the ethmoid region for short periods after removal of polypi. Several observers have since reported on the value of this method in suitable cases.

Tonsils and Adenoids. There has been considerable controversy over the subject of removal of the tonsils, especially in children, but all authorities seem to agree that, given the proper indication, complete removal of the tonsils is rarely attended by any but beneficial results (Kaiser, Glover). The absolute indication for tonsillectomy is recurrent attacks of tonsillitis, whilst in children the presence of enlarged cervical glands may be taken as an important indication. Certain manifestations of focal sepsis, namely nephritis, infective arthritis, and certain eye conditions, seem frequently to owe their origin to infected tonsils, whose removal may arrest the progress of the disease.

In children there is always a mass of adenoid tissue in the nasopharynx. This should start to shrink at puberty, and has usually disappeared by the time adult life is reached. During the early days of childhood, repeated nasopharyngeal infection may cause enlargement and permanent infection of this adenoid mass, so that its removal may be necessary to avoid or overcome the results of obstruction or infection of the nasal or ear passages. Also recurrent infection of the lower respiratory tract may be caused by adenoids, and it is possible that infected adenoids play a

more important part in the causation of ill-health in childhood than the tonsils.

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EARTHQUAKES: *see* SEISMOLOGY.

EASTERN CHURCHES. The following observations may be made upon the circumstances during 1938 of certain of the autokephalous Eastern Orthodox Churches.

(1) **The Patriarchate of Jerusalem** remains incapable of action owing to the deadlock caused by the demands of the arabophobe Orthodox, and to the inability of the High Commissioner to confirm the election of the Patriarch Timotheos until those demands are satisfied. The state of Palestine, and the closing of the Church of the Holy Sepulchre as in danger of collapse, have brought pilgrimage to a standstill. The partition of Palestine was strongly opposed by the Orthodox.

(2) **The Church of Cyprus** is still without an archbishop, Bishop Leontios of Paphos, the *locum tenens*, refusing, in spite of pressure from the Governor and the advice of the Œcumenical Patriarch, to take the steps necessary for an election.

(3) Facts concerning the **Patriarchate of Russia** are hard to ascertain. Many bishops and priests appear to have been executed during the recent purge; but the evidence available points to the Church more than holding its own. It is reported that there were 5,000 Easter worshippers in Moscow. In August the Council of Russian Bishops in Exile held an important assembly of clergy and laity at Karlovçi, near Belgrade. In the jurisdiction of the Metropolitan Evlogie a commission rejected a charge of heresy against Father S. Bulgakov.

(4) **The Church of Greece** suffered a great loss in the death, on Oct. 23, of its saintly and scholarly Primate, Archbishop Chrysostom of Athens. The Metropolitan Chrysanthos of Trebizond, a senior prelate of the Œcumenical Patriarchate but resident since 1921 in Greece, was elected on Dec. 10 to be his successor. The Zoë preaching movement has continued to spread.

(5) **The Serb Patriarchate** continued to feel the effects of its collision in 1937 with the Yugoslav State over an ill-conceived concordat with the Vatican. The Metropolitan Gavrilo Dozič, of Czernagora, was appointed to succeed the late Patriarch Varnava.

(6) **The Patriarchate of Rumania** felt the effects of the Central European crisis, following upon the absorption of Austria. The Patriarch Miron, as prime minister, has done much to stem anti-Semitism.

(7) **The Church of Poland** has been harassed by the government's sharp measures against Ukrainian nationalism. Over 160 Orthodox parishes in South Poland are said to have been dissolved, and their churches either destroyed or handed over to the Latin rite.

The situation in three of the Lesser Eastern, or Monophysite, Churches calls for some comment:

(1) **The Church of Ethiopia,** a daughter of the Coptic Church, remains in a state of chaos. The Italian government gives support to Bishop Auraham, declared Abuna after the refusal in 1937 of the Abuna Cyril to declare the Ethiopian Church independent of the Coptic Church.

(2) **The Church of Southern India,** a daughter of the Jacobite or Syrian-Orthodox Church, is threatened with a renewal of the lawsuits between the parties of the Patriarch and of the Catholics, which have been endemic since the Patriarch Abd-ul-Masih declared the Southern Indian Church autonomous and instituted the Catholicate in 1906. Nevertheless, a remarkable missionary effort, led by Mar Theodosios, is in process.

(3) The favoured treatment which the **Armenian Church** had received in the Armenian Soviet Republic appears to have been ended by order of Moscow. The death on April 12 of the Supreme Catholicos of Echmiadzin, Mgr. Khoren, was a disaster, both on account of his experience and influence, and because of the difficulty of electing his successor. (J. A. D)

EASTERN STATES are a scattered group of small principalities in India, under a Resident (Col. H. W. C. Robson); area about 67,000 sq. miles: pop. just over 8 millions. The best known of the group are Cooch Behar, Tripura, and Mayurbhanj.

ECUADOR, a South American republic situated astride the Equator on the Pacific, language, Spanish; capital Quito; president, Dr. Aurelio Mosquera Narváez. The area, including the Galápagos islands (2,400 sq. miles), is 337,392 sq. miles, but over 100,000 sq. miles is disputed with Peru. Pop. (1935 estimate) is 3,414,106. The chief cities are: Quito, 140,000; Guayaquil, 120,000; Cuenca, 42,000; Riobamba, 21,200.

Political instability marked Ecuador throughout 1938. On Aug. 10, a constituent assembly met and accepted the resignation of Provisional President Alberto Enríquez. His successor, Dr. Manuel María Borrero, resigned amid political turmoil on Dec. 1. The assembly then (Dec. 2) chose Dr. Aurelio Mosquera Narváez as constitutional president under a new constitution approved a few hours before. President Mosquera, however, was forthwith thrown into conflict with the assembly in a dispute centring about ex-President Luis Larrea Alba, and on Dec. 14 dissolved the assembly by force and called new elections for early in 1939. Part of the army, led by Larrea, thereupon attempted to overthrow the government, but the revolt was crushed after two days of fighting.

Behind the political unrest, and accentuated by the fact that no one political leader could command general support from the country, was popular dissatisfaction over the lack of progress in the acute boundary dispute with Peru. Negotiations with Peru had reached an impasse by June, and as frequent minor clashes in the disputed area continued, Ecuador appealed (Oct. 10) to the American republics who had just effected the Chaco settlement, asking for mediation. No positive results had been achieved by the end of 1938, however. Because of strained relations with Peru, Ecuador at first refused to attend the Pan-American Conference at Lima in December, but finally agreed to participate.

During 1938 the constituent assembly enacted several laws for the betterment of the Indian population and its protection from exploitation, and for co-operative farming. Nationalistic legislation directed against foreigners and rather idealistic laws for the protection of labour caused serious disputes with foreign corporations.

Economic improvement during 1938 was indicated by a record volume of railway traffic and generally increased trade. A barter treaty with Germany and a trade reciprocity agreement with the United States were made in April and August respectively.

Education. Ecuador has 2,239 elementary schools (enrolment over 180,000), 21 secondary schools, and four universities

Defence. Ecuador has an army of 10,000.

Finances. The monetary unit is the sucre (value: approximately fourpence). The 1938 budget was for 130 million sucres.

Trade and Communication. Ecuador has external communication by sea (almost entirely through Guayaquil) and north and south by air. Aviation facilities were materially improved in Nov 1938, when Quito became a regular "port of call" for the Grace Pan-American Airways. There are about 600 miles of railway and a growing highway system, with 420 miles of the Pan-American highway in operation and 245 miles under construction Imports (textiles, foodstuffs, and miscellaneous manufactured goods) in 1937 were $9,728,404, from the United States, Japan, Germany, and Great Britain, with exports of $12,122,950 (cacao, gold, oil, and coffee), almost half going to the United States. Cacao is the principal product. New mining laws enacted in 1938 have stimulated gold, silver, and oil production. In 1938 Ecuador produced 2,245,000 bbls. (est.), compared with 2,161,000 bbls. in 1937, and 1,617,000 bbls. in 1934. Ecuador is important in the production of "Panama" hats. (L. W. Be.)

EDDINGTON, SIR ARTHUR STANLEY, O.M., D.Sc., F.R.S. (1882–), British astronomer and philosopher. A biographical notice will be found in the *Ency. Brit*, vol. 7, p. 946. In 1928 he received the Gold Medal of the Royal Society, he was knighted in 1930, and in 1938 his reputation, internationally as well as nationally, was suitably recognized by the conferment of the Order of Merit. Sir Arthur's field has for the most part been in the realms of higher mathematical astronomy and physics, but while never deliberately writing for the lay reader, many of his works have a very wide public, among the more recent of which may be mentioned *Science and the Unseen World* (1929), *The Expanding Universe* (1933), and *New Pathways in Science* (1935).

EDINBURGH. Capital of, and second largest city in Scotland; pop. (1931) 438,998, (est. 1938) 469,700; area 32,402 acres; net rateable value (owner), £5,856,318.

During 1938, the capital was visited by Queen Mary, who was in residence at the Palace of Holyroodhouse in September, by the Duchess of Kent in July, and by other members of the royal family. The freedom of the city was conferred on Mr. Walter Elliot and Lord Macmillan; and in June the Lord Mayor of London paid an official visit. The Empire Exhibition at Glasgow brought many visitors to the capital, numerous organizations taking advantage of the occasion to hold their annual conferences in the city, among them those of the Sanitary Inspectors and the International Union of Local Authorities.

The face of the city is undergoing considerable change, many public buildings being in course of construction, notably the new government offices, which are now nearing completion and should prove a worthy addition to the city's landmarks. Plans for a new public hall are at present the subject of open competition among British architects.

The extension of Leith Docks is proceeding favourably, and the contractors are now engaged in the construction of the breakwater. Among other large schemes of public utility, the Corporation is developing the foreshore between Granton and Cramond, and town-planning scheme for the hinterland is awaiting departmental approval.

In common with other local authorities, Edinburgh has given much time and energy to the organization of an Air Raid Precautions scheme. The percentage of volunteers in the city is among the highest in the United Kingdom, over 9,000 having been enrolled by October out of a total of 13,000 required; the majority are now fully trained. A trial "black-out" was held over a large area of the Forth estuary in April, and afforded much valuable information to the authorities, as did the crisis period in September, when the organization was put to a severe test. The scheme has already been approved generally by the Home Office and is now being developed in detail.

EDSTROM, DAVID, sculptor, was born at Hvetlanda, Sweden, on March 27, 1873, and died at Los Angeles on Aug 13, 1938. He came to the United States with his immigrant family in 1880. He began work as a newsboy at 13, became a factory hand, and then at 21 decided to study art at all costs and worked his way back across the Atlantic to Sweden. He studied at the Swedish Royal Academy, and a rich patron started him on his successful career by sending him to Italy to continue his studies. He made portrait busts of many distinguished sitters, including members of the Swedish Royal family, and was responsible for the Montreal war memorial. Since he early developed what is called "the artistic temperament", however, he had many quarrels with his clients and smashed much of his sculpture. He gave a frank and convincing account of his life in his autobiography *The Testament of Caliban*, published in 1938.

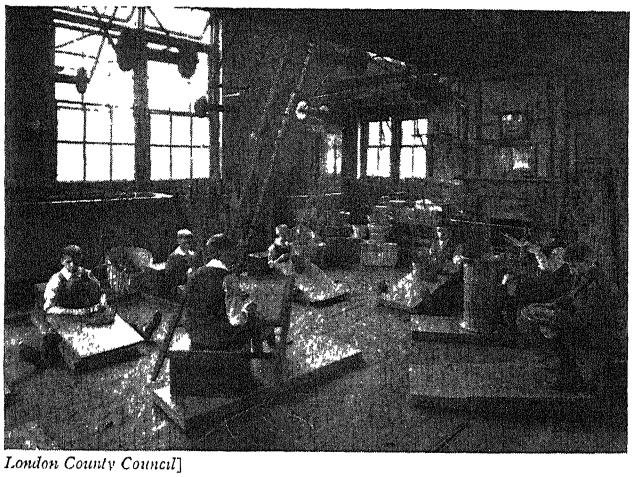
EDUCATION. Under this head is included a general survey of education in the principal English-speaking countries of the world, to which is added a section on education in British India. For more complete details of education in Great Britain and Northern Ireland, *see* Elementary Education; Secondary Education; Education, Moral and Religious, etc.

British Empire. The collaboration of the members of the British Commonwealth in educational reform has become an established fact. The annual surveys published by responsible officers of all Dominions in the *Year-Book of Education* on some branch of educational system give useful comparisons, and thus help the members of the Commonwealth to develop a common British tradition. During the last two years Dr. F. H. Spencer, late Chief Inspector of the L.C.C., visited Canada, South Africa, and Australia, and presented reports on the reorganization of technical education. The reorganization of school systems on the lines of the Hadow Report goes on apace, the consolidation of rural schools is progressing, and the dovetailing of technical and academic post-primary education is a recognized aim of all Dominions.

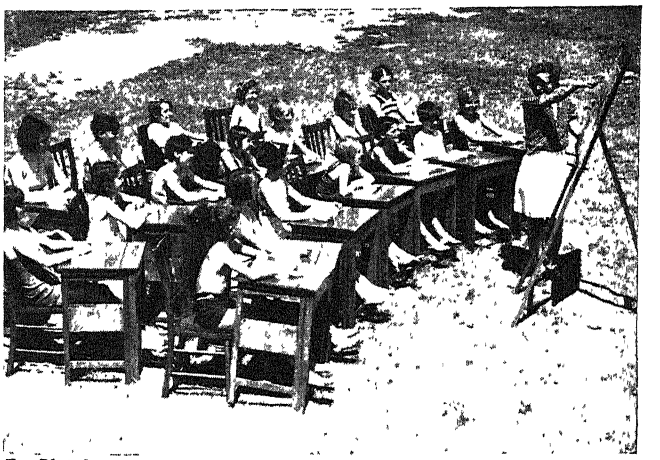
Canada. The Dominion subsidy on technical education, granted in 1919 and renewed in 1931, was not paid during recent years, but in 1937 the federal government provided a sum of $1,000,000 for the National Employment Commission under the Department of Labour to be spent in 1937 for the purpose of training young people between the ages of eighteen and thirty for useful occupations.

In British Columbia the powers of the Ministry of Education were extended in 1937. Many one-school units were formed into administrative districts, with a Director of Education at the head. The revision of programmes was carried forward, and included secondary grades as well. The pamphlet, *Aims and Philosophy of Education in British Columbia*, pointed out the necessity of civic training and of adapting school-instruction to environment.

In Manitoba the New Education Act of 1937 gives enlarged powers to the Ministry of Education concerning



London County Council]
BLIND BOYS BASKET-MAKING AT LINDEN LODGE. THIS L.C.C. SCHOOL CONTAINS 40 BOYS



Fox Photos]
A CLASS AT HAZELBURY OPEN-AIR SCHOOL, EDMONTON NORTH, OPENED 1938. THERE IS A NINE-ACRE PLAYING FIELD

programmes, text-books, examinations, and qualifications of teachers

In New Brunswick the proposed reorganization of the school system is still in the committee stage. The committee set up in 1937, has agreed as to general plans and objectives. The 6–3–3 scheme was adopted, and a sub-committee was set up to draft programmes for the first six grades in detail. This part of the curriculum was to be tried out in practice by a selected group of teachers during the school-year 1938–39. The necessity for consolidation of rural schools is again emphasized by the Director of Educational Services in his Report.

County area is recommended as the new unit. Several surveys were made for that purpose.

In Nova Scotia the Apprenticeship Act was passed in 1937, and the Director of Technical Education was appointed chairman of the new Apprenticeship Committee. There will probably be a rapid extension of vocational training, with a modern apprenticeship system in designated trades.

In Ontario new programmes for I–VI grades were published in 1937, followed in 1938 by new programmes for VII–VIII grades. Annual examinations from class to class are abolished. New programmes for secondary schools were also issued, in 1937 for grade IX and in 1938 for grade X. According to the recommendation of the Hadow Report, the first two years of secondary schools are made into a complete course in itself. Special subsidies are offered for the introduction of manual work and domestic economy.

In Quebec new programmes for the French-Catholic primary schools were approved in 1937 and introduced in the 1937–38 school year. Singing becomes obligatory, and more attention is paid to physical training and hygiene.

In Saskatchewan the secondary school curriculum was definitely divided into academic, preparatory to a university, and that of general culture, giving more scope to selective subjects of non-academic character.

Australia. During the last two years conferences of Ministers and Directors of Education urged the federal government to come to the aid of educational services in the six States, but up till now no departure from the old policy was made. In New South Wales the Act of 1936 established a consultative committee. A special committee on secondary education was entrusted with the revision of programmes. In 1936 a child guidance clinic was opened for the study of defective children. Technical education had special attention, since in 1936 consultative committees were organized in each branch of industry, including employees, employers, and teachers. In 1937, full-time day pre-apprenticeship classes for pupils with at least two years of post-primary education were established. In Victoria new transport schemes of post-primary pupils were instituted in nine additional districts. The new courses made great demands on the teaching staff, and in some cases the first wave of enthusiasm has almost expended itself. But in the best schools, where equipment is ample, school work has been given a greater measure of interest and reality. In technical education the enrolment reached a new record of more than 27,000 pupils, owing to the increased industrial activity and demand for technical instruction. A special survey of industrial conditions was carried out in the metropolitan area. In South Australia an agricultural bias was introduced in ten High Schools, and in 1938 two more High Schools were to have the course. The Superintendent of Technical Education was awarded a Carnegie grant for visiting the U.S.A., Canada, Great Britain, South Africa, France, and Germany. He brought back valuable reports on technical education in those countries. In Nov. 1937 an Australian Conference on Technical Education took place in Adelaide. The Conference discussed a wide range of subjects, including the raising of the school age and consolidation of rural schools. In Western Australia steady progress has been made in the consolidation of schools by means of bus services. During the year the Department experimented in introducing post-primary correspondence courses in remote rural schools. The Commonwealth Government granted a small subsidy for unemployed youth, which was spent on vocational training. In 1938 a Royal Commission on Youth Employment and Apprenticeship was set up. In Tasmania domestic science was introduced into all schools having more than 75 pupils. The provision of district rural schools, known as "area" schools, was extended.

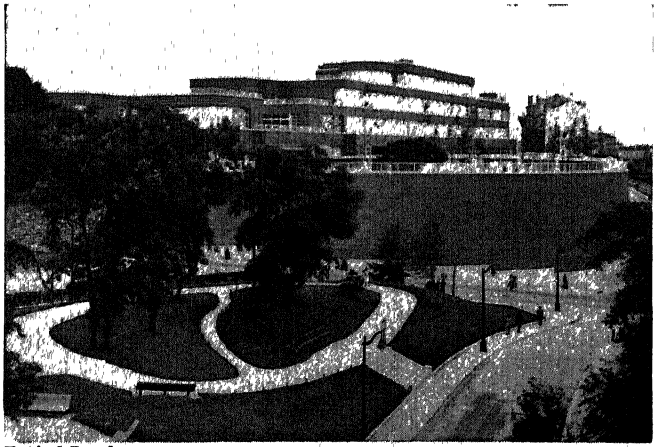
New Zealand. In 1937, the proposed Council of Adult Education was set up and the grant for Adult Education increased. The Council of Educational Research issued in 1938 its report on the reform of the intermediate school system. The lowering of the age of admission to school to five years has become fully operative, and about 17,400 children under six years of age were in the schools during 1937. The number of students in Training Colleges has been increased in anticipation of the raising of the school-leaving age to fifteen years and the coming reduction in the

BRITISH COMMONWEALTH.—NUMBER OF PUPILS IN 1936–37.

1 Country	2 Population 5–20 years in 000.	3 No of pupils in primary schools.	4 No. of pupils in secondary schools.	5 No. of pupils in vocational schools.	6 No. of pupils in private schools.	7 No. of students in universities and colleges.	8 Per cent of all pupils to 2.
England & Wales	9,504	5,179,742	466,245	1,205,449	400,000	93,346	77
Scotland	1,213	630,425	156,818	174,634	14,000	18,249	82
Northern Ireland	344	194,347	13,683	22,770	3,000	1,580	69
Canada	3,250	1,799,833	307,651	81,976	108,775	92,798	73
Australia	1,866	828,648	102,170	87,604	240,146	10,781	69
New Zealand	399	221,857	21,224	17,290	32,518	5,218	75
South Africa (Europeans)	584	317,137	54,788	23,819	25,962	8,382	74
Ireland (Eire)	860	481,599	35,890	72,521	2,034	5,745	69
British India	97,740	11,276,527	1,456,420	268,532	701,072	115,224	14

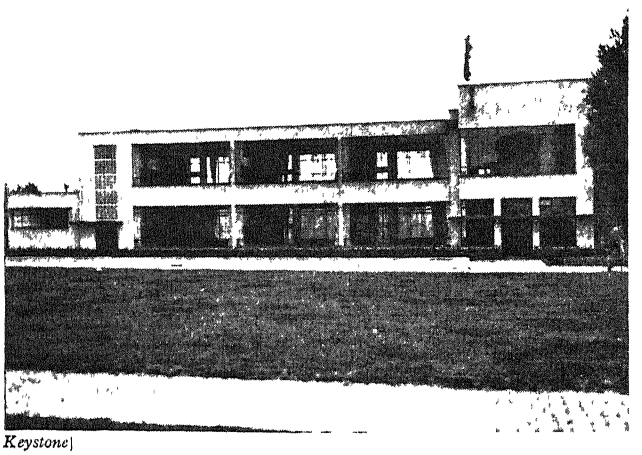
size of classes. The abolition of the Proficiency Examination (in 1936) will be evidently of far-reaching influence in the educational system of the Dominion. During 1938 the policy of consolidation was proceeded with, and approval was given to the consolidation of 103 small schools into 57 central schools. It becomes now more and more possible to bring to country pupils facilities which were previously the privilege of great urban centres. The work of vocational guidance, has been taken over by the government. Eight vocational guidance officers have been appointed in four chief cities. The scheme for the free issue of a half-pint daily ration of milk to children commenced on March 1, 1937. About 85 per cent of school children accepted the scheme, and, as the Report says, "There is much more mental activity than was anticipated and a renewed interest in the work".

The Union of South Africa. In 1937 a new Union Department of Social Welfare was created, which took over from the Education Department the administration of the new Children Act (1937). Some of the main provisions of the new Act are the raising of the maximum age of "child" from the sixteenth to the nineteenth birthday and of "infant" from seven to ten years, and the establishment of children's courts and commissioners of child welfare. On Feb. 19, 1937, the Union parliament passed the resolution: "That the government be requested to consider the advisability of taking steps to establish a National Education Board for the purpose of co-ordinating educational matters, such board in particular to devote its attention to the problem of the large number of children who leave school without having progressed beyond the primary stage". Two memoranda were prepared by the Education Department, recommending reform of the whole system of finance. The present system of Union subsidies creates a glaring inequality of opportunity for post-primary education as between the provinces, and especially as between the rural and urban communities. The suggested remedy is to distribute grants according to the needs of the respective areas and their ability to maintain the schools. In Natal the Education Commission issued in 1937 its Report, in which it recommends *inter alia*: (1) the raising of the school-age to sixteen years and free education up to sixteen years; (2) registration of all private schools; (3) reorganization of the system on the lines of the Hadow Report, with a break at twelve years; (4) an agreed syllabus in religion with safeguards for objectors; and (5) consolidation of rural schools. In the Orange Free State the system of consolidating rural schools by using motor transport is developing, and at present about 3,000 pupils are thus transported to 35 central schools. In the Cape of Good Hope new provision has been made for remotely domiciled pupils. The new primary course was published in 1937 and introduced in some schools in 1938. From 1939 it will be in operation in all schools. Its three fundamental principles are: (1) the school should be child-centred; (2) the school should train the child so that he will adapt himself quickly and function easily in the society in which he will have to live; (3) the teacher must be granted as large a measure of freedom and responsibility as possible. In the Transvaal the consolidation of rural schools is proceeding through the use of motor transport and the establishment of boarding-houses in central schools. A special commissioner of vocational guidance was appointed. A special Commission of Education, similar to that in Natal, was set up in 1937 to report on the whole school system.



Topical Press]
SCHOOL AT PUTEAUX, NEAR PARIS, OPENED JUNE 9, 1938

Eire. The introduction of Irish in secondary schools is being gradually extended, so that at present 25 per cent of secondary schools do all their teaching work through Irish and about 35 per cent more are bilingual. The system of vocational and technical schools started in 1930 is rapidly expanding. At present every Irish town of 4,000 to 7,000 people has municipal vocational schools and the county committees are establishing similar schools in larger villages. The local authorities, in co-operation with the Ministry of Education, are preparing plans for selecting and training teachers in the following six branches: (1) rural science, (2) woodwork, (3) metal work, (4) engineering and mathematics, (5) commerce, and (6) Irish and cultural subjects. The teachers of vocational schools have to pass an examination in the command and use of oral Irish before appointment. Twenty new regional schools for local needs were opened in 1936–37. The curriculum is closely connected with the local industry. Besides engineering, rural science, spinnning, and dyeing, special centres for advanced training in various branches of technology were established in 1936–37.



Keystone]

1938 OPEN-AIR SCHOOL AT UCCLE CALEVOET, BELGIUM

British India. In view of the reorganization of Indian administration now in process, education is temporarily in the background. Existing ministries are reluctant to frame extensive schemes, which they may not be in a position to carry out. But the discontent with existing educational provisions is widespread, and there is unanimous demand for reform. In the coming reorganization a valuable service might be performed by the Central Advisory Board of Education which, after being abolished in 1923, was revived by the Government of India in 1935. The defects of the present system are generally recognized. They are: (*a*) an appalling stagnation and wastage, especially in primary stages; (*b*) inefficient local administration; (*c*) overcrowding of colleges and universities by students unfitted for higher academic studies; and (*d*) ludicrously inadequate provision for the education of girls. However, there are some encouraging signs. There was a considerable increase in the two upper classes of primary schools during the last two years, thus showing a diminution of wastage. The percentage of trained teachers is also continuously increasing. The number of girls under instruction is rising more rapidly than that of boys. The enrolment of pupils of depressed classes is increasing both absolutely and relatively. The prejudice against them is slowly dying out, and they are now generally admitted freely into ordinary schools and are allowed to sit in the class along with other children.

BIBLIOGRAPHY: *The Year-Book of Education*, 1939; *Annuaire International de l'Education*, 1938; *Annual Reports* on education of all the Provinces and States of Canada, Australia, New Zealand, South Africa, Eire, and India; also Reports and Memoranda mentioned in the article. (N. HA.)

United States. On Feb. 18, 1938, the committee which President Roosevelt in June of the previous year had requested to study the entire question of Federal aid to education, made to him its report, which is one of the significant contributions to the discussion of a very important and for many decades a very vexed educational question. Decision on the recommendations of the committee, of course, rests with the Congress.

The committee was unanimous in its judgment that, because of the wide disparities of wealth, income, and educational burden among the 48 States and also among counties within almost every State, Federal aid to education was necessary if not, in fact, inevitable. The report showed that in some States there were twice as many adult workers (on whom the burden of educational support falls) per child of school age as in some other States. It also showed that an undue educational burden continued to fall on the rural areas. This burden appeared to be very heavy in the southern States Forty per cent of the people of the United States between the ages of ten and twenty in 1920 had gone to urban communities by 1930. This fact had far-reaching educational significance.

The committee recommended Federal aid to education on the basis of educational *need* of the several States and proposed a procedure by which such need could be determined fairly objectively and accurately. In addition to aid for general education it also recommended special funds for teacher education, school buildings, State departments of education, adult education, rural libraries, and educational research through the United States Office of Education. The fiscal recommendation of the Committee was for $72 millions in the year 1939–40 and annual increases of Federal grants until these reached $202 millions by the year 1944–45.

One recommendation of the committee was that the Civilian Conservation Corps and the National Youth Administration be merged into a National Youth Service Administration. Another recommendation, which created considerable discussion and caused some apprehension, was that which would permit pupils in non-public schools to share to a limited extent in the proposed Federal educational aid. Benefits in such schools, under this recommendation, would derive from textbooks and other reading materials, transport, scholarships for pupils sixteen to nineteen years of age, and certain health and welfare services. The conditions under which such benefits would be enjoyed by pupils in non-public schools "should be determined by the States, or by the local school jurisdictions receiving the grants if the States so determine". This part of the report, and the old fear of Federal control of education in the States if Federal aid should be provided, aroused wide discussion. In this connexion it should be noted that the Constitution of the United States does not mention education; and by implication in the tenth amendment to that document the promotion of education has been considered a local or State responsibility.

The American Federation of Teachers, which is affiliated to the American Federation of Labor, held its twenty-second annual meeting in August and reported that its membership had doubled in two years. The organization now has in 250 localities about 30,000 members, or three per cent of the million teachers in the United States. Jerome Davis, formerly of the faculty of Yale university, was elected for a third term as president of the Federation.

The second national conference on educational broadcasting was held in Chicago in the late autumn of 1937, under the sponsorship of 28 national organizations, with 87 other national organizations co-operating. Five hundred people from thirty states and Canada attended the conference, the purpose of which was to consider such matters of public policy in radio as: provision of a national forum for discussion of education by radio; examination and appraisal of conditions in broadcasting as a basis for consideration of the resources of wireless education; and the means of bringing to as large an audience as possible the findings of studies made in educational broadcasting.

The work of the American Council on Education was varied. One of the most important projects now going forward in the Council is a comprehensive study of teacher education in the United States. This study, which has been made possible through a substantial grant from the General Education Board, was begun in Jan. 1938, and is to continue for five years. A commission has been set

up by the Council, with Payson Smith, formerly commissioner of Education in Massachusetts, as chairman, and Karl W Bigelow, formerly of Columbia university, as director. There is widespread interest in the study because the improvement of teaching is so closely related to practically all reforms in the entire field of education During the year the Council, in co-operation with many national organizations, held a conference in which problems of teacher education were discussed. A similar conference is to be held in 1939

During the year there was considerable discussion of the annual report of President James B Conant, of Harvard university, in which he expressed the opinion that a reduction of the number of students in higher educational institutions in the United States was desirable This theme he developed in an address in February before the annual meeting of the American Association of School Administrators and also in *Harper's Monthly Magazine* for May. His opinion was questioned rather pointedly even if by implication by President Robert M. Hutchins, of the University of Chicago, in *The New York Times Magazine* for June 12. It was interesting to note that each of these eminent higher educational leaders invoked, in support of his peculiar argument, the educational views of Thomas Jefferson, expressed nearly 100 years ago. Jefferson was the first American statesman to consider education a fundamental part of the democratic faith; and his perspective for education has not yet been gained by any American commonwealth or any American college or university president.

For the second year students from the thirty schools, distributed throughout the country, that have been participating for several years in the experiment of the Progressive Education Association and who entered college without taking the entrance examinations, were reported to have done better in their studies than a similar number of students who entered college under the old plan. This information came out at the second Progressive Education Association's Workshop, held at Sarah Lawrence college, Bronxville, New York, in the summer. Similar workshops or conferences of the association were held in Colorado and California. The Southern Association of Colleges and Secondary Schools conducted such a conference for several weeks at Vanderbilt university, Nashville, Tennessee, but not in affiliation with the Progressive Education Association. About 1,100 students from the schools in the experiment of the Progressive Education Association entered 170 different institutions in 1936 and about 1,200 the following year. A larger group entered college in the autumn of 1938. The outcome of this interesting and widely publicized project is awaited eagerly by the professional educators and perhaps, also, the public generally.

Wide discussion of "progressive" education continued during the year. In his *Experience and Education*, John Dewey gave a clear analysis of traditional education and of so-called progressive education. This book and Boyd H. Bode's *Progressive Education at the Crossroads* were interpreted by some critics of progressive education as warnings both to the ultra-progressives and the ultra-conservatives in educational philosophy. Dewey said that "those who are looking ahead to a new movement in education, adapted to the existing need for a new social order, should think in terms of education itself rather than in terms of some 'ism' about education, even such an 'ism' as 'progressivism'."

Very important was the publication, in *The Student and His Knowledge*, by the Carnegie Foundation for the Advancement of Teaching, of the results of its long study of the relations of secondary and higher education in Pennsylvania, through high school and college examinations given in 1928, 1930, and 1932 The book shows the academic inventory and the academic growth of the baccalaureate mind It also shows that the student is more important than the curriculum, and that the American system of units and credits has served its day and may soon cease to be

Other important developments during the year included increased appropriations for public educational support in most of the States; the full or partial restoration of salaries of teachers to the pre-depression level, continued interest and activity in the field of curriculum study and curriculum construction and reconstruction, about which much ado has been made for many years; the tendency for teachers' colleges to offer work for the master's degree; and the tendency towards a wider discussion and consideration of the problems of instruction and of general education, especially in high schools and colleges. Here and there also appeared tendencies to alter conventional requirements for advanced degrees, in such fields as education, sociology, public welfare, and public administration, and other younger disciplines in higher education. It should be noted that through the aid of the Public Works Administration of the Federal Government several hundred million dollars were expended in the erection of school, college, and university buildings throughout the country. Increased interest appeared in educational experimentation, in addition to that now being promoted by the Progressive Education Association, the Southern Association of Colleges and Secondary Schools, and other organizations.

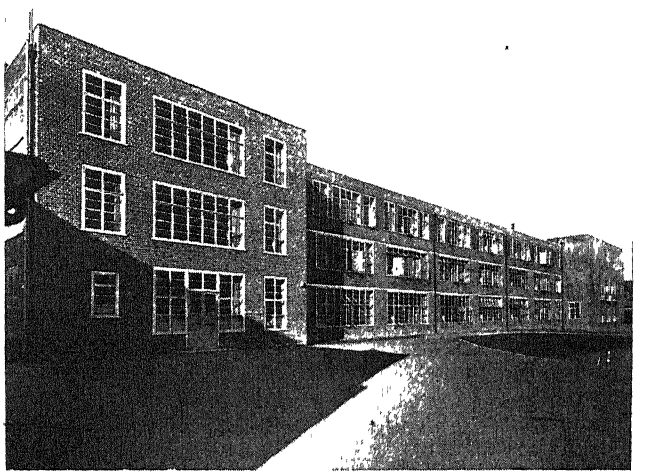
On Dec. 12, 1938, the Supreme Court of the United States reversed a decision of the Supreme Court of Missouri on writ of certiorari and held that Lloyd Gains, petitioner, a Negro citizen of Missouri, must be admitted to the Law School of the University of Missouri, unless facilities equal to those provided in that institution were made available to him elsewhere within the State. This was one of the most significant decisions affecting education made in the United States in many years. It seemed to mean that those States (seventeen in number) that have been maintaining the public policy of separating the two races in educational institutions must make radical alterations in their arrangements for graduate and professional work for Negroes. The decision was immediately seen as a momentous one, with many puzzling ramifications. The majority opinion was delivered by Chief Justice Hughes. The separate opinion was delivered by Justice McReynolds and concurred in by Justice Butler. The number of Negroes in any one of the States affected by the decision, who will desire graduate or professional training, is likely to be small for many years to come. This fact will make the maintenance of equal higher educational facilities in separate institutions impose in some instances heavy financial burdens. Prominent leaders of both races have considered and discussed the possibility of providing a regional university for Negroes to be supported by funds from the various Southern States. Apparently, however, the recent decision makes such a plan impossible, as does also the practice of subsidizing Negroes in universities outside the South. (*See* also ADULT EDUCATION; EDUCATION, NEW METHODS IN; ELEMENTARY EDUCATION; SECONDARY EDUCATION; VOCATIONAL EDUCATION; UNIVERSITIES AND COLLEGES.)

BIBLIOGRAPHY. *Journal* of the National Education Association of the United States for 1938 (monthly except June, July and August); *The Educational Record.* (E. W. K.)

EDUCATION: ADMINISTRATION AND FINANCE.

The Education Act, 1936, has provided the major administrative problem of the year 1938. Local authorities, in preparation for its operation, have been considering how and upon what terms they will issue, on and after Sept. 1, 1939, leaving certificates for "beneficial employment", and they have been dealing also with numerous applications received under the later clauses of the Act for grants towards the cost of erecting non-provided senior schools and purchasing the necessary sites. In the first task they have been assisted by a joint memorandum issued by the three principal Associations of Local Authorities, which gave a lead as to the attitude to be adopted to the various considerations which have to be weighed in assessing "beneficial employment." The procedure for dealing with grants to non-provided senior schools was outlined by the Board of Education in a circular which admirably anticipated the administrative difficulties which confront local authorities and the voluntary bodies when considering proposals and determining the conditions to be attached to building grants. The absence of friction between local authorities and the churches over these complicated transactions, except in Liverpool and one or two other areas, has shown that the controversial attitude of other years has been largely replaced by a spirit of goodwill. The building grants agreed upon by local authorities have ranged between the two prescribed limits, namely 50 and 75 per cent, and there has been some variety also in the conditions upon which the grants have been made, especially as to the method of appointing teachers. Meanwhile, local authorities have been pressing forward with their schemes of reorganization with a view to a complete system of senior schools, but in some cases progress has been delayed by such factors as the uncertainties arising from new housing and slum clearance. Considerations of this nature and the special difficulties encountered in certain rural areas led the Board of Education to extend in approved cases the period of the fifty per cent building grant to local authorities for a further period of three years, that is up to Dec. 1943. The demand of the Ministry of Health for a five-year programme of capital expenditure involved education committees, in common with other branches of the local government service, in the task of surveying future capital requirements; the subsequent statements by the Board of Education indicated that, while that department viewed the replacement of obsolete elementary school premises as an urgent problem, it was less ready to approve capital expenditure upon secondary schools. Much consideration was given by education authorities during the year, in consultation with teachers, to the subject of Air Raid Precautions, and tentative plans for an emergency were prepared in most areas based, as a rule, upon a somewhat cautious circular issued by the Board of Education in Jan. 1938. The crisis—and the enterprise of the London County Council in particular—enabled the general public to appreciate how valuable a part local education authorities and teachers can play if, in the event of an emergency, the rapid evacuation of congested areas should be necessary.

Among more normal activities may be mentioned the inquiries into nursing services by an inter-departmental committee, into the teaching of domestic subjects under the auspices of the Board of Education, into juvenile delinquency by the Home Office, the completion by the Board of Education's consultative committee of their protracted investigation into problems of post-primary education, and the issue of a departmental report on the problems of



London County Council]
LONDON JUNIOR ELEMENTARY SCHOOL, OPENED 1938

children with defective hearing. Other points of interest were changes in the conditions of the School Certificate, including a revision of its principal examination dates to assist the movement for "staggered holidays"; the continuance of the National Fitness Campaign and the appointment of a number of area organizers; the tendency of local authorities to increase their grants to universities, and the notable rally of educationists and industrialists in the north-east to the support of the now federated University of Durham; the increasing stress upon the value of education at the nursery stage; and the further growth of technical education and the opening or extension of a number of technical schools and colleges.

Local education authorities have, during the year, again pressed for a review of the grant system, and their demands evoked the sympathetic attention of the Board of Education. But the problem still awaits thorough investigation. The existing terms of the financial partnership between the Board and local authorities are unsatisfactory, based, as they are, on the Report of the Kempe Committee issued in 1914, when the demands upon local expenditure were much less exacting. In 1913 the cost of education was under £30 millions; in 1923 it had risen to £70 millions, and the charge on local rates had advanced from 18·9*d.* in the pound to 34·8*d.*, an increase of nearly 100 per cent. The latest figures available are for the year 1936. The expenditure for that year shows a further increase to £88 millions and the charge on local rates advances to 38·7*d.* in the pound. The problem mainly concerns the finance of elementary education For higher education the government pay fifty per cent of the recognized expenditure; but for elementary education the grant is still calculated by the obsolete Kempe formula, based upon figures which showed the cost of elementary education to be £3 per child; in 1936–37, however, the average cost per child exceeded £15. In 1918, the Fisher Act ensured that local authorities who received less than fifty per cent under the formula would have their grant made up to that proportion; this concession was suddenly repealed during the financial crisis of 1931, and has never been restored. While the proportion of the Exchequer's contribution to local educational expenditure has, in the post-war period, decreased by more than ten per cent, scarcely less serious is the formula's prescription of a differential rate for different services. The hampering effect of this

may be illustrated by the position which has arisen during the year concerning the provision of clothing and footwear for physical training in elementary schools. The government have rightly urged local authorities to make this provision, but, in spite of protests, the Board of Education, at a time when generous capital grants up to 75 per cent are being made under the Physical Training and Recreation Act to clubs and similar organizations, have found themselves unable to contribute for this purpose more than the twenty per cent which the formula allows for "other expenditure". A grant system so obsolete and inequitable can hardly survive much longer. (W. O. L. S.)

EDUCATION: GENERAL TRENDS. The movements characterizing the general trends of education in 1937 received a new, deeper, and even a tragic significance in 1938 from the political world-situation leading up to the September crisis. The intensification of nationalism in the totalitarian states has bent the bow of education in school and university even more tautly in the direction of subservience to the state and the despiritualization of educational values. The disruption of national life in China has brought about the destruction or dispersal of the majority of Chinese universities, and there appears to be a deliberate attempt in Japan to eliminate democratic influences in education. Even in the democratic countries there has been manifest a sharper note of criticism of education as too academic and of the examination system as too tyrannical and in need of overhaul and relaxation. Suggestions for rationing the numbers of students in universities have been made, more particularly in England, Germany, and America: it is maintained that large numbers of undergraduates are either unsuitable for university education or that the universities themselves are out of touch with modern needs. In England these tendencies have been associated with an increased interest in religious, moral, and civic education. In Italy many Papal allocutions have emphasized the seemingly irresolvable conflict between the secular and religious educational ideologies. The youth labour camp movement, noted in the *Ency. Brit. Book of the Year*, 1938, as peculiar to Germany, received unexpected support from the September crisis in the problem, raised for all great nations, of the evacuation of school children from vulnerable centres of population. Both in Berlin and London this problem received prompt attention from the educational authorities, and the measures taken by the London County Council and the services rendered by the teachers, men and women, were a notable illustration of the ever-increasing sense of civic service and vocation in education. This evacuation problem also served to direct attention again to the question of school buildings: are they being erected on too lavish and permanent a basis: is there not a stronger case for the portable school buildings and for the school as a community centre?

Common to most countries, and deriving not a little of its force from world rearmament is the growing volume of constructive criticism of school curricula. It is apparent in the report of a three years' inquiry into the character and cost of public education in New York State: there it is found that the primary public school curriculum needs revision and reintegration; curricula in high schools and colleges are too narrow and lack co-ordination; universities are less centres of research and learning than of mass production of uneducated graduates. It is apparent in France, where, by means of a series of *arrêtés*, variations in the curricula of *lycées* and *collèges* have been introduced and the co-operation of both parents and pupils enlisted. M. Monzie



London County Council]
ART CLASS IN A JUNIOR ELEMENTARY SCHOOL, LONDON

has emphasized three factors in the problem—co choice, and rationalization. The last has led to what a called classes *d'orientation*. The curriculum problem is al apparent in the field of the training of teachers, and England a committee of inspectors of the Board of Educ tion has produced a far-reaching and severely criticiz memorandum thereon, while the National Union Teachers has produced a voluminous report of an investiga ing committee insisting upon the necessity for a clos contact between training colleges and universities (s TEACHERS, CERTIFICATION OF) and for greater unity in tl teaching profession as a whole. But transcending in in portance all these manifestations of criticism of curricula the recently issued volume by the Consultative Committe of the English Board of Education. This report, briefl known as the Spens report, deals with secondary educatio and is the climax to the long series of reports from thi Committee which began in 1926. The education of youtl has been a main preoccupation of the Committee for ter years past and the Spens report gives articulate expressio to several long-felt but rarely voiced convictions and criti cisms. As such, the Spens report gives a lead to the worl in the field of education. Is secondary education as the world has known it for the first thirty-five years of this century doomed? Must it at last be freed from its deep roots in the mediæval grammar school, must not the requirements of a realistic youth psychology and of a realistic *weltpolitik* be met in the creation of a new system of technical education? What Germany, Switzerland, and to a less extent France had done on a small scale at the close of the nineteenth century, Russia and the English-speaking countries are attempting on a vaster scale. The scholar, not the subject, is the primary concern of the Spens report, but the scholar as a future citizen dedicated to the service of the state. Hence the recommendations of the report are based upon a deep concern for the physical and psychological interests of youth. Because of this concern, the report stresses the value of the corporate life of the school, particu-

larly expressed in the school-dinner; the importance of reasonable self-government, of a tutorial system in schools, and of the appointment of careers masters. Following upon these universally applicable ideals, the report recommends the complete reconstruction of the curriculum of the orthodox secondary (grammar) schools, with a greater emphasis upon physical education, æsthetic subjects, and the Bible (*see* EDUCATION, MORAL AND RELIGIOUS). It gives a new orientation to environment for the country grammar schools, and above all it recommends the immediate creation of a new type of school, the Technical High School, to enjoy the same prestige and public support as the older type of secondary schools This is probably the most important constructive recommendation since the establishment of junior and senior schools as the result of the 1926 Hadow Report on the Education of the Adolescent, and it provides for the administrator the problem of co-ordinating the three streams of post-primary education—that of the senior school (with the additional year now in force), that of the secondary or grammar school, and that of the new Technical High School. At long last English education is beginning to conform to the continental, particularly the German model.

During 1938 the attention of educators continued to be drawn to the effects of the falling birth-rate, and a private inquiry was instituted by a conference of Head Masters of public schools: it is indeed debated whether within the next decade many of the public schools founded in the nineteenth century will either be eliminated or driven to seek state support and enter thereby the category of aided secondary schools. At the same time the economic pressure upon pupils in the English public schools has led them to seek careers in industry and commerce both at home and abroad, and this has been largely responsible for the noticeable extension of travel-tours for public school as well as for secondary school pupils. These tours cover the Empire as well as the Continent: the National Council of Education, the Overseas Education League, and the Hudson's Bay Company have been conspicuous in this activity. Parallel therewith have been the extended scholarships and bursaries for overseas students of all nationalities provided by the British Council and in some cases by the Colonial Office.

Such tendencies are indeed but another aspect of the problem of education for leisure which modern conditions make so acute. It has been the commonest theme for Speech days, and the encouragement of School Libraries, the development of hobbies, the strengthening of camp, club, and hostel movements for youth are all indicative of a constructive concern for equipping youth with a variety of interests enabling them to live wisely, to think critically, and to feel finely upon great issues. So, too, the increasing stress upon civic education and the pronouncements of such authorities as Professor I. L. Kandel, Dr. F. C. Happold, Lady Simon, of Manchester, and others signify that the nobler aspects of education for citizenship have a wider appeal than perhaps extremists in political camps suppose. Aligned with this has been the increased interest in textbooks: their scope, character, function, and use. The Board of Education's Reports on School Libraries, on Technical High Schools, and upon examinations make clear that not only must the quality of text-books be ever subject to improvement, but also their proper purpose and the right technique in using them. If "set" books are to disappear from school certificate examinations, texts and text-books assume a new importance.

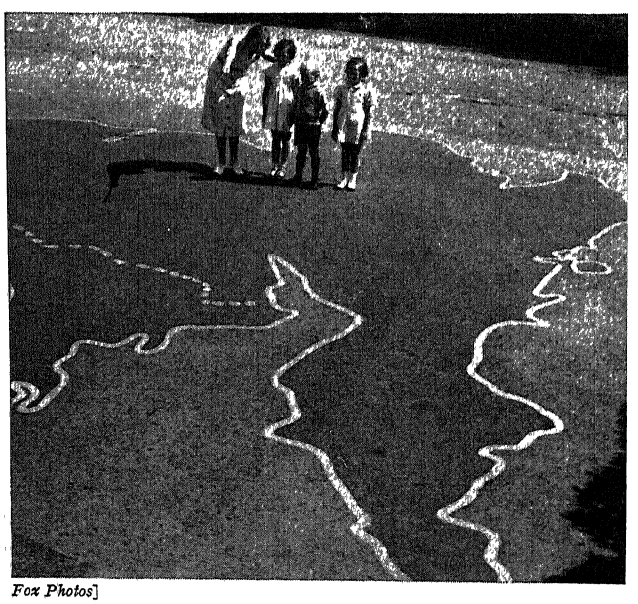
An important indirect influence upon the general trend of education was exercised by the publication of the Home Office report upon corporal punishment in prisons. For many years past the permanent efficacy of, and ultimate justification for the physical chastisement of children have been doubted: now the Home Office report gives new support for a humane system of school government and discipline so that education may indeed be, in Charlotte Mason's words, "an atmosphere, a discipline, and a life" (*see* EDUCATIONAL ASSOCIATIONS). A noticeable experiment in that direction may be seen in the establishment, under Home Office auspices and the governorship of Mr. Cyril A. Joyce, of a new type of Borstal Institution in the Hollesey Bay Colony, East Suffolk. There education is realized as recuperative and remedial, liberal as well as vocational. (A. A. C.)

EDUCATION: MORAL AND RELIGIOUS. The year 1938 was characterized by exceptionally widespread and sustained interest and activity in moral and religious education. In the legislative field, the Protection of Young Persons Act was speedily followed by the acceptance of Miss Florence Horsbrugh's measure for the amendment of the Adoption of Children Act of 1926. Both these measures, together with the Home Office Report on the abolition of corporal punishment in prisons, are justly to be regarded as chapters in the moral and religious education of a people. A similar and equally strong expression of the feeling for moral education was found in the generous attitude everywhere adopted towards refugees, especially children, from Germany, Spain, Czechoslovakia, and elsewhere. Both Lord Baldwin's fund and the Church Assembly's vote of £50,000 were further indications of an awakened national conscience. Two historical commemorations gave to moral and religious education in 1938 the deeper significance and value derived only from history and tradition: (i) the celebration of the 400th anniversary of Henry VIII's Injunction ordering an English Bible to be placed in every parish church: these celebrations included, not only religious services, but largely attended lectures all over the country, and B.B.C. discourses; (ii) the celebration in May of the bicentenary of John Wesley's conversion: this celebration, in which the Anglican as well as the Methodist church participated, was a striking example of the growth of religious tolerance and co-operation.

The September crisis provided a further illustration in the extraordinary spread of services of public and private intercession, while a negative test of the strength of the cause of moral and religious education was found in the fiasco of the so-called "godless" congress held in London. Great interest was taken in the publication of a Report on religious education of which the Master of Balliol was a principal signatory: the report bore witness to the essential and central place occupied in education by religion which, while unteachable as a life, is nevertheless in its institutional and above all in its scriptural elements both fundamental and teachable. Still more striking is the fact that a whole chapter of the Consultative Committee's Report (*see* EDUCATION: GENERAL TRENDS) is devoted to Scripture. The Spens Report emphasizes the need for skilled and expert teaching of Scripture, requires an objective and historical approach thereto, and a proper subordination of the moral teaching of the New Testament to its religious affirmations. The Report also ranks religious knowledge (Scripture) equally with the mother tongue in the education of the adolescent. It is not surprising therefore that conspicuous success has attended the formation of the Institute for Christian Education, which has organized active

branches throughout the country. Nor has the cause of civic and moral education thereby suffered or been weakened Once again, the Spens Report has given a much-needed and valuable stimulus in insisting that, if proper use is made of the " utility " phase in the development of the interests of youth, the moral and civic education of both sexes can be at once informal, real, and of lasting value There is thus official recognition, both of the central importance of moral and religious education, and of a fundamental principle of technique, that method therein should be the way of discussion rather than of dogma : " It is a cardinal principle that the examination in these matters should follow the curriculum and not determine it ". (A. A C.)

EDUCATION, NEW METHODS IN. The new or progressive education has developed along two lines, one deriving its inspiration from a new philosophy, the other from a new scientific outlook. The philosophy on which the new education is admittedly based is Dewey's experimentalism or instrumentalism, itself a development of James's pragmatism. The negative aspect of Dewey's teaching is a denial of permanent values or ultimate aims in human experience; *The Quest for Certainty* on which mankind has been engaged since the time of Socrates is regarded as a mere will-o'-the-wisp. This tends to the rejection by the progressive schools of all human achievement and culture, as well as of the well-established principles of science. The content which largely constituted the curriculum of the old education is dismissed as mere formalized subject-matter, a residue of mediævalism. Emphasis is transferred from the timeless to the changeable, as in *Education for a Changing Civilisation*. Dewey's positive doctrine affirms that everything in life is provisional, instrumental, a means to an end that emerges only as we proceed. Reality, it is also contended, is revealed in action, not by thought. The method by which alone progress is possible is, for Dewey, the experimental; deductive thinking which has proved fruitful in every branch of knowledge is considered appropriate only to a static civilization. The obvious, although not the significant, feature of the experimental method is overt action ; hence the new education's slogans—" activity for activity's sake ", " activity leading to further activity ". The only activity



Fox Photos]
GEOGRAPHY TAUGHT BY A MAP DRAWN ON THE PLAYGROUND AT A CLAPHAM COMMON SCHOOL, LONDON

nevertheless that is educative is a significant activity which, while enabling the pupils to satisfy their present needs, by the same act reveals, interprets, or augments reality, thus the creative fantasy of the child must be disciplined into logical thought, universal in its nature, if the child himself is to gain real satisfaction and if his activity is ultimately to contribute to the solution of the world's problems. So with morality and art, although not all progressive educationists recognize the need of objective validity in the pupil's efforts Dewey's philosophy of education, with its emphasis on the industrial arts, has undoubtedly value, if only for its recognition that " civilization is for good or ill finally established upon the basis of machine-production and culture must make terms with this fact or perish " ; an enrichment and extension of the curriculum has resulted, the aim being to approximate the conditions of school to life outside. This tendency has been reinforced by the researches of the scientific movement applying its principle of " frequency of use " to answer Spencer's question, " What knowledge is of most worth ? " Educational method is relative to the content of instruction ; as the applied sciences constitute the predominant feature of the curriculum, the technique of the workshop becomes the method of the school. Hence the place of " the project " in the new education. The free activity of the pupil, failing to find expression in collective class methods, demands individualization of instruction, which may take the form of the Montessori method for young children or the Dalton plan for older pupils, the latter differing from the project mainly in the fact that it admits a predetermined curriculum. In all the new methods teaching is displaced by learning, and the motto of the new schools becomes, in the words of Caldwell Cook, " Here we learn ", not " Here they teach ". The scientific movement has likewise contributed to the individualizing of instruction by revealing through its application of mental tests the great variations of intelligence among children. In the sphere of school discipline the democratic implications of the new education are most apparent. The old discipline was autocratic ; the aim of the new discipline is to make the pupil self-reliant, to train him to become a self-respecting citizen in a democratic community. To this end freedom is indispensable, but it must be a freedom compatible with discipline : hence the new education's support of self-government by the pupils. Failure to substitute a new, but more effective, discipline for the old has brought upon some progressive schools Dewey's censure : " It is the absence of intellectual control through significant subject-matter which stimulates the deplorable egotism, cockiness, impertinence, and disregard for the rights of others, apparently considered by some persons to be the inevitable accompaniment if not the essence of freedom." The new curriculum, new equipment, new methods, which progressive education demands, account for the present enthusiasm for school planning by education authorities. Progressive education is at present eclectic ; the task of the future will be to effect the synthesis between the new educational philosophy and the new scientific movement in education.

BIBLIOGRAPHY. John Dewey, *Experience and Education* ; W. H. Kilpatrick (editor), *The Educational Frontier* ; B. B. Bogoslovsky, *The Ideal School* ; W. C. Bagley, *Education and Emergent Man.* (R. R. R.)

EDUCATIONAL ASSOCIATIONS. In Great Britain educational associations, both of public and professional character and interest, are so numerous and diverse that they cannot be cited seriatim in such a book as this. In

1938 the professional associations, particularly the National Union of Teachers, were vigilant and vocal on the problems arising from the raising of the school-leaving age; the evacuation of pupils in times of war, and the Spens report. Specialist associations such as the Institute of Christian Education and the Association for Education in Citizenship were increasingly supported by the growing lay public interested in education. All these associations participate either in the week of educational conference held in London each January, or (so great is the number) in the not less influential North of England Conference held at different northern cities also in January. As a rule these composite conferences have private sessions as well as inaugural meetings. In Jan. 1939 the three principal inaugural addresses were given by Sir Charles Grant Robertson, Sir Richard Livingstone, and the Dean of St. Paul's. The place of religion and theology in modern universities was the theme of the first; a critique of the university product occupied the second, while Dr. W. R. Matthews raised the issue of what civic education really means.

The most active non-specialist association was the Parents' National Education Union, which celebrated its jubilee. A considered appreciation of the work of its founder Miss Charlotte Mason was delivered by Professor A. A. Cock, who raised in the same address the whole question of the physical chastisement of children. (A. A. C.)

EGYPT. The year 1938 opened with a new cabinet in office, representing all parties except the Wafd, under Mohamed Mahmud Pasha. Almost immediately came the defection from the Wafd of the more enlightened element, known as "Saadists", led by Dr. Ahmed Maher and Mahmud Fahmy El Nokrashi Pasha.

On Jan. 20 King Farouk was married to Mlle Farida Zulfikar amid widespread popular rejoicings. Five days later the young King established a precedent by broadcasting his thanks to the nation for their demonstration of affection and loyalty.

On Feb. 2 the chamber was dissolved. Elections on April 1 resulted in an overwhelming victory for the government, with whom the Saadists had joined hands. At the opening of parliament on April 12 another break with tradition occurred, when Queen Farida, accompanied by the Queen-Mother, sat, lightly veiled, in an open box.

On April 24 a cabinet crisis occurred owing to Ismail



Keystone]
EGYPTIAN TANKS ON MANŒUVRES IN THE DESERT



Planet News]
KING FAROUK AND QUEEN FARIDA OF EGYPT

Sidky Pasha's objection to relinquishing the Finance for the War portfolio, which the King wished him to take in order to speed up the reorganization of the Army; on May 13 Sidky resigned on his appointment as a director of the Suez Canal Company. But the reconstruction of the cabinet was delayed until June 24, when the Saadist leaders took the place of the Ittahidist and Shaabist representatives.

On May 26 King Farouk's eldest sister, Princess Fawzia, became engaged to Shahpur Mohamed Riza, Crown Prince of Iran.

On June 2 the dispatch of a government mission to select a site for a dam near the point where the White Nile leaves Lake Albert was announced.

Meanwhile, considerable criticism was aroused by the news that the barrack accommodation, which Egypt had undertaken to provide for the British troops on the Suez Canal, would cost the country £E 15 millions. There was also much talk about the British military mission having exceeded its powers. On July 5 Hassan Sabry Pasha, War Minister, publicly paid a handsome tribute to the work of the mission, and on Aug. 4 the Egyptian premier initialled in London an agreement, signed in Alexandria on Sept. 22, whereby the British government undertook to bear half the cost of the barrack accommodation. On Aug. 31 Brigadier-General G. M. Macready was appointed chief of the British military mission in succession to Major-General Sir Marshall Cornwall.

The menace of war in Europe found Egypt unprepared, and the Governor of Cairo, Abdel Salam Shazly Pasha, was placed in control of A.R.P. measures, the services of Capt. Burt-Smith, a Home Office expert, being secured to advise him.

On Oct. 11 an Arab Congress for the defence of Palestine declared the Balfour Declaration null and void, rejected partition, and demanded the cessation of Jewish immigra-

tion and a national constitutional government for Palestine. An Arab Women's Congress, a week later, voted similar resolutions.

On Nov. 3 the delegation sent by Lancashire under Sir Thomas Barlow to discuss the question of the high import duties on cotton-piece goods reached an agreement with the Egyptian government for the adoption of a form of quota based on consumption of Egyptian cotton.

On Nov. 17 Queen Farida gave birth to a daughter, who received the name of Ferial

On Dec. 6 the Egyptian government accepted the invitation to send delegates to the London conversations about Palestine.

The question of defence dominated parliamentary discussions during the whole year. Contrary to custom, the two houses sat without summer vacation, rising only two days before the opening of the new session in November, to deal with the government proposals for meeting the cost of defence, estimated at £E.40 millions spread over five years, and of social reforms. These took the form of new taxation —a stamp duty, an income-tax, and succession duties—and were still under examination by parliament at the end of the year. (A. Mn.)

Area and Population :

Area, approx. 383,000 sq. miles (arable land 13,600 sq. miles).
Population (Census 1937) (preliminary figures) 15,904,525.
Chief Towns : Cairo (1,307,422), Alexandria (682,101), Tanta (94,421), Mansourah (68,637), Damanhour (61,791), Assiut (59,925).

Ruler. King Farouk I.

Language. Arabic.

Religion. Mohammedan, 91 per cent ; Copt, 7 per cent.

Production 1937 :

Wheat	1,235,000	metric tons
Barley	230,200	,, ,,
Maize	1,651,200	,, ,,
Rice	371,100	,, ,,
Cane Sugar, refined	150,000	,, ,,
Cotton, ginned	494,700	,, ,,
Ground-nuts	15,500	,, ,,
Petroleum	170,860	,, ,,
Phosphate Rock	517,002	,, ,,

Overseas Trade 1938 :

Imports	£E.36,934,377
Exports	£E.29,342,486

Communications 1937 :

Roads : first-class, 1,457 miles ; second-class, 3,246 miles.
Railways : State, 3,523 miles ; agricultural light, 876 miles.

Shipping, gross tons	69,925	
,, entered ports	35,318,511	tons
,, passed through Suez Canal	27,236,233	,,

Finance and Banking:

Year	Revenue (est.)	Expenditure (est.)	Revenue (act.)	Expenditure (act.)
	£E.	£E.	£E.	£E.
1936–37	35,153,260	35,150,042	35,502,854	34,192,038
1937–38	35,992,820	36,992,820	—	—
1938–39	38,997,000	42,267,000	—	—

Public Debt (May 1, 1938)	£E.95,208,720
Reserve from Budget Surpluses	£E.34,046,317
Notes in Circulation (June 30, 1938)	£E.19,181,830
Gold Reserve (June 30, 1938)	£E.6,241,000
Exchange Rate (£E. = 100 piastres)	97½ piastres = £1 stg.

Education 1936–37 :

Elementary, secondary, etc.: Government schools, 4,795 , scholars, 930,248.
High schools, Government, 6 ; scholars, 1,123.
Fuad I University · scholars, 8,150.
Foreign schools, 410 ; scholars, 76,750.

Defence :

Army (1937–38) 24,180 officers and men ; Air Force (1937) : 67 aeroplanes, 39 officers, 230 other ranks

Miscellaneous :

Motor vehicles licensed (Dec 31, 1937)	31,212
Wireless receiving-set licences ,,	67,923
Telephone instruments in use ,,	50,022

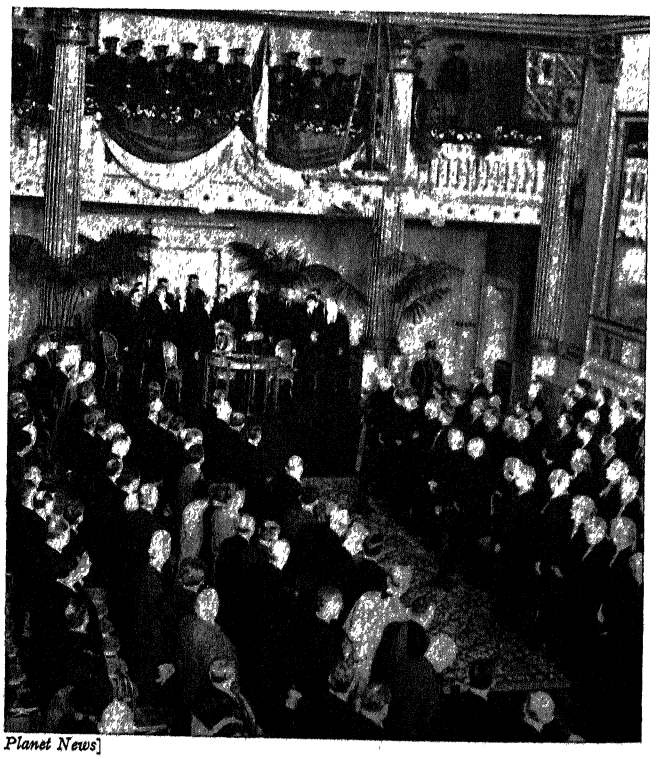
EIRE. On the coming into force of the new Constitution (Dec. 29, 1937), the British and Dominion governments announced that they were prepared to treat it as not effecting any fundamental change in the position of the former Irish Free State.

Conversations for the settlement of the dispute between Eire and Great Britain, begun in London on Jan. 17, 1938, concluded successfully on April 21. Agreements came into force on May 22 providing (1) that coastal defence stations at Cobh, Berehaven, and Lough Swilly should be transferred to Eire ; (2) that Eire should pay Great Britain £10 millions in final settlement of land annuities, pensions, and loan charges withheld since 1932, and that Great Britain should abolish penal tariffs on Irish produce ; and (3) that Eire should enjoy benefits granted the Dominions by the Ottawa Agreement Acts, 1932, while herself providing for review by the Prices Commission of existing tariffs on the principle of giving United Kingdom producers full opportunity for reasonable competition.

The Cobh defence station was transferred on July 11, and those at Berehaven and Lough Swilly on Sept. 29.

Dr. Douglas Hyde, ex-president of the Gaelic League, was elected President of Eire by agreement on May 4, and officially installed on June 25.

On May 25, Mr. de Valera's government was defeated by one vote on a question of civil service arbitration. A



Planet News

DR. HYDE, PRESIDENT OF EIRE, SPEAKING IN DUBLIN



Keystone]
MR. DE VALERA HOISTING THE FLAG OF EIRE ON SPIKE ISLAND AS IT WAS HANDED OVER TO EIRE BY BRITAIN

general election took place on June 17, with the following result: Fianna Fáil (Mr. de Valera), 77, Fine Gael (Mr. Cosgrave), 45; Labour, 9; Independents, 7. This gave Mr. de Valera nine fresh seats and an absolute majority of sixteen. On June 30 he was re-elected prime minister with an unchanged government.

The new senate provided for in the constitution was formed on March 11, the Labour Party abstaining. The dissolution of the Dáil necessitated a new election, which took place on Aug. 17, with only slight changes.

On Oct. 17 Mr. de Valera in an interview reiterated his belief that the partition of Ireland makes the chances of co-operation with Great Britain in war very slight. He rejected a plebiscite, but offered local autonomy to Northern Ireland. As President of the League of Nations he sent, on Sept. 27, a telegram warmly supporting Mr. Chamberlain's peace effort.

Eire officially recognized Italy's Abyssinian Empire when her Minister on April 30 presented his credentials to the King-Emperor. (M. T.)

Area and Population:
Area 26,601 sq. miles.
Population (est. June 30, 1938) 2,937,000.
Chief Towns (pop. census 1936): Dublin (468,103), Cork (80,765), Limerick (41,061), Dun Laoghaire (39,785), Waterford (27,968).

President. Dr. Douglas Hyde (*de h-Ide*).

Languages. Irish and English.

Religion. Christian (Roman Catholic 93 per cent).

Production 1937:

Wheat	190,200 metric tons
Barley	119,500 ,, ,,
Oats	582,500 ,, ,,
Potatoes	2,749,700 ,, ,,
Beet Sugar	82,000 ,, ,,
Coal	128,000 ,, ,,
Agriculture and Fisheries, net output (1936)	£40,800,000
Industry ,, ,, ,,	£39,300,000

Labour (1936–37):

Number of insured workers, average	428,460
,, ,, unemployed, ,,	81,760

Overseas Trade 1938:

Imports, merchandise	£41,404,903
Exports, ,,	£23,878,720

Communications:

Roads (1935–36)	10,000 miles main, 37,000 miles secondary
Railways (1937)	Total track mileage 2,551
Shipping ,,	585 vessels; net tonnage 74,132

Finance and Banking:

Revenue (1937–38)	£31,209,000
Expenditure (1937–38)	£32,053,000
Public Debt (March 31, 1938)	£33,182,000
Notes in circulation (Jan. 1, 1938)	£15,906,673
Reserve, British bank securities (March 31, 1938)	£9,513,000

Education 1936–37:
Elementary schools, 5,212; scholars, 477,878.
Secondary ,, 331, ,, 35,890.
Universities: National, 4,254 students; Trinity College, Dublin, 1,491.

Defence 1938. Army (including Air Force, 293), 6,519; Reserve 5,511.

Miscellaneous:
Motor vehicles licensed (Dec. 31, 1937): private cars, 44,491, other vehicles, 20,476.
Wireless receiving set licences (year 1936–37) . 105,211
Telephones (1936–37): exchanges, 776; installations, 24,749.

ELECTIONS. In Europe, Bulgaria, in March 1938, held her first general election since 1931, and returned to parliamentary government with a government majority of 48; and a plebiscite held on April 10 throughout Germany and Austria resulted in a 99 per cent endorsement of Hitler's action in Austria. In Czechoslovakia, municipal elections were held in May and June; and in December elections for the Slovakian diet resulted in a sweeping victory for the official and only list of candidates. In October, senatorial elections were held in France; municipal elections in Belgium; and a general election, in which no opposition candidates were allowed to be nominated, for the National Assembly of Portugal. In Poland, there was a general election on Nov. 6, the second under the 1935 Constitution, a senatorial election on Nov. 13, and municipal elections on Dec. 19. In November also, presidential elections took place in Turkey and Lithuania; and provincial and municipal elections throughout Sweden, the strength of the Social Democrats being much increased. In December a general election in Yugoslavia kept in office Stoyadinović's government; while at Memel the Germans polled over 87 per cent of the valid votes in a general election in which 97 per cent of the electorate took part.

In Egypt elections, resulting in the rout of the Wafdists, were held on March 31 and April 1; the elections for the National Assembly of the Hatay took place, after a two months' postponement, at the end of August; and in Turkey, at the municipal elections held in October, women for the first time exercised their right to vote. During this month Chile held a presidential election.

Within the British Empire, municipal elections were held in England and Wales (*see* LOCAL GOVERNMENT), and Northern Ireland held a general election on Feb. 9 on the partition issue, the Unionist cause registering a striking victory. Eire's second election within eleven months took place on June 17th, giving Fianna Fáil an absolute majority. South Africa held its elections on May 18, the United (Government) Party scoring a decided success; on June 8 the provincial elections held in Saskatchewan saw the first appearance at the polls, and the decisive defeat, of the Social Credit Party; and in New Zealand the general elections held in October resulted in the Labour Party being again returned to power.

A bill for the conducting of local elections by means of proportional representation was counted out in the British

By-elections to British House of Commons, 1938

Constituency	Date	Cause	Party and Majority	Previous Majority	Result
Barnsley	June 16	Death	Lab · 10,514	7,635	No change
Bucks : Aylesbury	April 19	Resignation	Cons. · 10,944	11,106	No change
Derby, Western	June 2	Succsn to peerage	Cons 5,524	3,483*	No change
Fulham, West	April 6	Death	Lab. 1,421	3,483	Gain from Cons.
Glamorgan : Pontypridd	Feb 11	Death	Lab. 7,349	7,814	No change
Ipswich	Feb 16	Raised to peerage	Lab. · 3,161	7,250	Gain from Cons.
Kent : Dartford	Nov. 7	Death	Lab 4,238	2,646	Lab gain
Lancaster · Farnworth	Jan 27	Death	Lab 7,463	5,201	No change
Lancaster · Fylde	Nov 30	Death	Nat Cons · 20,615	23,352	Change from U.
Lewisham, West	Nov 24	Death	Nat. Cons · 5,648	12,370	No change
London, City of	April 6	Death	Cons. (unopposed)	11,570*	No change
Oxford City	Oct 27	Death	Nat. Cons . 3,434	6,645	Change from U.
Perth, Kinross & West	Dec. 21	Resignation (for re-election)	Cons . 1,313	5,169	Govt gain from Ind. (U)
Scottish Universities	Feb. 21	Death	Nat Govt. . 8,424	7,359†	No change
Somerset : Bridgwater	Nov. 17	Elevation to bench	Ind. Prog . 2,332	10,569	Loss by Cons
Stafford : Lichfield	May 5	Death	Lab. 826	3,298	Gain from Nat. L.
Stafford : Stafford	June 9	Succsn. to peerage	Cons. · 4,408	3,661	No change
Walsall	Nov 16	Death	Nat. Lib. 7,158	8,969	No change
Willesden, East	July 28	Death	Cons. 3,731	10,090	No change
York, W.R. : Doncaster	Nov 17	Death	Lab : 11,708	7,952	No change

* 1929. † By-election, Jan. 1936.

House of Commons on Feb. 25 ; and in April it was officially announced that the rule put into force by the National Government in 1932 against the participation of Cabinet Ministers in by-elections would no longer be maintained, though this relaxation would not apply to the Prime Minister, Chancellor, or Foreign Minister. From the last general election in 1935 to the end of 1938, 58 by-elections (including those unopposed) have taken place, the government losing thirteen seats—ten to Labour and three to Independents. At the close of the year three by-elections were pending : East Norfolk, through succession to a peerage, and Ripon, York, W.R , and Holderness, York, E.R., through the decease of the sitting members. (L. H. D.)

United States. The net quantitative result of the 1938 elections was to increase the number of Republicans in the House of Representatives by 81, in the Senate by eight, and in the State governorships by thirteen. Contests of particular interest were those of : New York State where Democratic Governor Lehman was re-elected by a close vote over Thomas E. Dewey ; Pennsylvania where the Democratic candidates, Charles Alvin Jones for governor, and George Howard Earle for senator, were defeated by Republican Arthur H. James and James J. Davis, respectively ; Ohio where Governor Martin L. Davey and Senator Robert J. Bulkley, Democrats, were defeated for re-election by the Republican team of John William Brickner and Robert A. Taft ; Michigan where Democratic Governor Frank Murphy was defeated for re-election by Republican Frank Dwight Fitzgerald ; Wisconsin where Progressive Governor Philip F. Lafollette was defeated for re-election by Republican Julius Peter Heil ; Minnesota where Farmer-Labour Governor Elmer A. Benson was defeated for re-election by Republican Harold Stassen ; California where Republican Governor Frank F. Merriam was defeated for re-election by Democratic Culbert Olson.

ELECTRICAL ENGINEERING is concerned primarily with (1) the production, transmission, and distribution of electric energy, (2) the design, manufacture, and application of electrical equipment, (3) communication : telephony, telegraphy, radio, television, etc., (4) electric transport, (5) illumination, (6) a large group of miscellaneous applications of electrical theory.

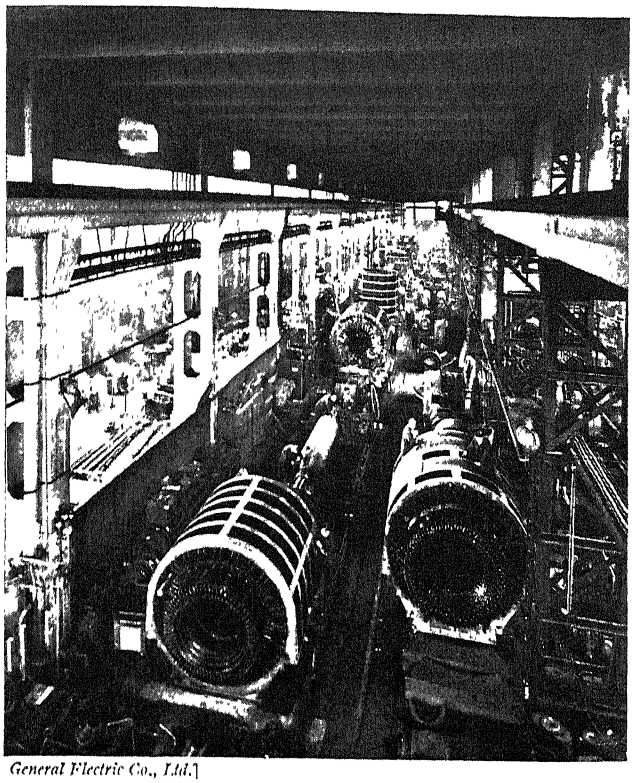
In almost all countries the supply of electric energy has recently been reviewed from the point of view of war-time operation. In Great Britain, for example, studies have been made to protect generating stations and to supply important industrial centres by numerous lines, so that damage to one will not destroy the service. In the United States a Government committee produced standards for generator sets up to 50,000 kw, to place these on a more nearly mass-production basis. The generating capacity of the United States could not support the industrial system, or at best would be taxed to the utmost, if that system were to operate at full production capacity.

During 1938 the production of electric energy in Great Britain (23,000,000 million kw.-hr. in 1937) increased. The British grid system during its five years of operation has saved almost half its original cost. The production of electric energy for public use in the United States (120,000,000 million kw.-hr. in 1937) was less during 1938 until the late autumn when it rose to a weekly average greater than ever before.

Most new steam installations are superposed units, taking steam at high temperatures and pressures made possible by recent technical developments. Exhaust steam is used to operate old equipment.

Hydro plants, already highly efficient, continue to be built despite predictions of previous years in certain quarters that increased steam plant efficiency had outmoded them because of the large capital outlay usually required. In many European countries, where economic efficiency is not necessarily the basic consideration, hydro development also continues. Italy (output 15,000,000 million kw.-hr. in 1937) obtains 95 per cent of its energy from such plants, and the new programme of Russia (output 38,000,000 million kw.-hr. in 1937) calls for the installation of 5,500,000 kw. hydro capacity in the next five years. The Central Valley (California) project on which work started in 1938 will have a 400,000 kw. capacity. Several of the Russian projects are large ones.

Many design improvements and new developments were reported during 1938 in the manufacture of electrical equipment. An appreciable improvement in transformers, basic to the alternating-current power system, apparently will result from the use of spiral cores with the magnetic flux directed along the direction of rolling of the cold-rolled



General Electric Co., Ltd.]
THE TURBO BAY, G.E.C. ENGINEERING WORKS, WITTON, BIRMINGHAM, SHOWING 3,000-R.P.M. ALTERNATORS UNDER CONSTRUCTION

core material. Petersen coils or ground-fault neutralizers employed extensively in Europe, began to be used more widely in the United States. However, the device is limited in its usefulness and it is probable that the near future will see new developments in the field of relieving faults without having lines interrupted by opening of breakers.

An apparently important development has been reported in Great Britain of a high-voltage cable, paper insulated and filled with an inert gas, ready for practical use at voltages as high as 132 kilovolts.

In the field of urban transport the return of the electric trolley seems indicated. High acceleration and deceleration rates, smooth control, and low weight per horsepower are characteristics of the technical design. The United States has even seen the tram making strides forward, but in Great Britain tram tracks are rapidly being grubbed up to make room for the trackless trolley or trolley-bus, which is greatly increasing in popularity. Recent improvements in design, inspired by the extensive use of petrol or oil-fired buses, are responsible for its wider acceptance.

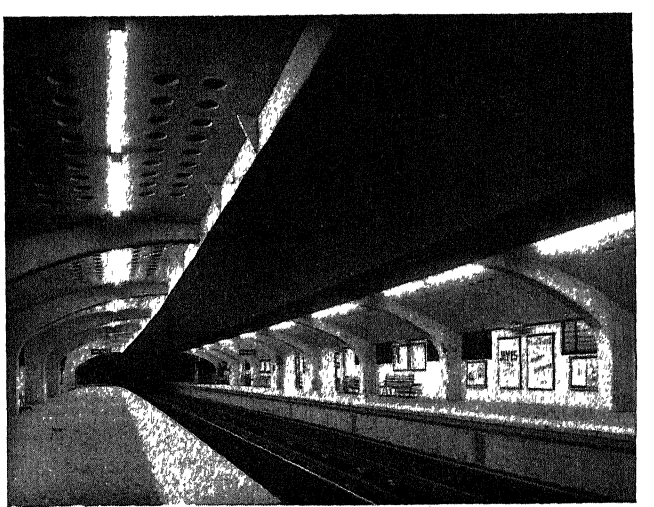
Illumination. In illumination there are three developments worthy of note. First is the introduction on a commercial scale of fluorescent lamps. These are tubular lamps in which invisible ultra-violet radiation from a low-pressure mercury discharge actuates fluorescent powder which has been caused to adhere to the cylinder walls. The result is a lamp which produces coloured light far more efficiently (under proper circumstances) than present lamps. Consequently the fluorescent lamps are being marketed at low power ratings since much more illumination is available for a given energy input. Another result of this development is that a nearer approach to daylight has been obtained than was ever commercially available before.

The other two noteworthy developments in illumination are the rapidly increasing lighting of roads, often with the recently developed sodium or mercury illuminants, and the extension of the commercial sale of non-glare devices based on a polarizing principle. The latter development may, some time in the far distant future, eliminate the need for highway illumination, since it may permit the use of high-intensity headlights on motor cars without causing glare or momentary blindness to a driver of a vehicle coming in an opposite direction.

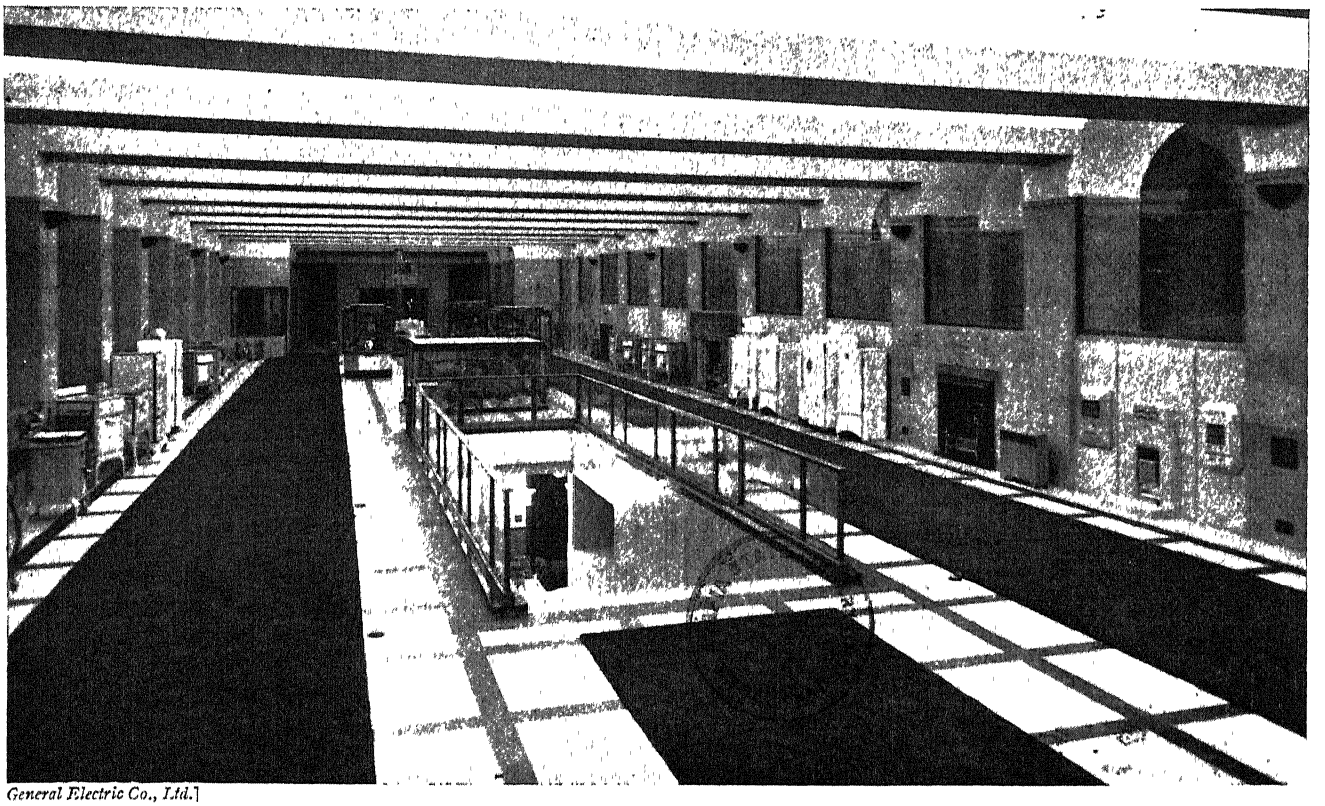
Telephone. The United States continues to contain about half of the world's 37 million telephones. The climax of a long development has been reached with the introduction there of a new hand-set, of improved electrical and mechanical design, and so compact that signal and all other auxiliary equipment is contained in the base on which the transmitter-receiver rests. Other developments in telephony include improvement in carrier transmission and further improvement of co-axial transmission in anticipation of the transmission of television programmes requiring several-million-cycle frequency bands. In telegraphy there have been no outstanding technical developments.

Radio. Television has been available to the public in parts of England for some time, and on a very limited scale in other countries The commercial production of television sets in the United States was announced for the Spring of 1939. It is an interesting commentary on engineering work there that complete television systems have been developed and discarded in favour of improved systems, with full reports appearing in the engineering journals and with engineering handbooks containing extensive sections on television, while the commercial sale of receiving sets has awaited for some years an improvement in business conditions. The basic system will be 441 lines interlaced, 24 frames per second.

ELECTRIC LIGHTING. Using fluorescent inorganic substances, such as sulphides, tungstates, and silicates, coated on the inside of glass tubes, developments of a radically new line of illuminants were rapidly advanced. Advantages include approximately double the luminous output per watt; less heating; the reproduction of daylight quality, and long life. In the United States where interest in sources of light has been immensely stimulated by the World Fair of 1939, five sizes of tubular fluorescent lamps were widely sold in tints of yellowish-white of 3,500° K. temperature equivalent, daylight of 6,500° K., blue, green,



General Electric Co., Ltd.]
MORDEN MANOR STATION, SURREY, LIGHTED BY FLUORESCENT TUBES



General Electric Co., Ltd.]
THE ELECTRICITY SHOWROOM IN THE NEW MANCHESTER CITY HALL EXTENSION BUILDING IS ILLUMINATED BY NEARLY 4,000-FT. OF FLUORESCENT TUBE LIGHTING, THE LARGEST INSTALLATION OF ITS KIND IN THE WORLD

pink, red, and gold. The tendency in Europe has been toward coatings of luminiscent phosphors in long small-bore tubing operated on high voltage. The " zeon " phosphor-coated tubing in numerous colours was introduced in North America, particularly to decorate buildings of the New York and San Francisco Fairs. Annual sale of large tungsten-filament lamps in the United States for the first time passed the 500 million quantity and, aided by smaller bulb sizes and reduced prices, a production is tentatively scheduled for an increased consumption of some 15 million lamps annually.

The bipost base on larger wattages continued to replace the screw-shell base, while the fluorescent lamps introduced a new line of spring sockets accommodating projecting pins on the ends of the lamp bulb. New lines of aluminium interior neck-coated projector and reflector lamps were standardized. This integral combination of bulb and reflector seemed accepted for motor-car headlighting, but actual usage was postponed. A new 250-watt high-intensity mercury-vapour lamp, operating at some six atmospheres pressure in a quartz capillary tube, was standardized, while in the United States the line of similar lamps was expanded to include the 100-watt clear, also black bulb ultra-violet and Type S-4 ultra-violet lamps, plus both high- and low-pressure 400-watt types. A 500-watt, 25,000-lumen capillary mercury arc lamp was developed to light European airports. The 1,000-watt capillary water-cooled mercury lamp was standardized for photo-engraving and projection service, this at 65 lumens per watt, the highest efficiency bulb type light source yet developed. Transmission of pictures over the ordinary telephone lines was made possible through the introduction of the neon crater lamp, and the brightness of motion pictures increased through an extended use of high-intensity direct-current arc carbons.

Lighting Practice. The Better Light—Better Sight educational programmes of North America and intensive improvements in school lighting and eye conservation extended throughout the world, aided by international co-operation through the Illuminating Engineering Societies and the International Commission on Illumination. Adequate wiring was recognized as vital to an extension of lighting, and committees functioned enthusiastically to revise wiring standards. Coloured light became feasible and popular through usage of fluorescent lamps, while a notable outdoor lighting innovation consisted of high-intensity mercury floodlighting of trees and green shrubs. This, together with flush ceiling lens plates, or down-lights, and the use of mercury lamp projectors for blue and green colour effects, characterized the equipment for the New York World's Fair, while black light and fluorescent effects and sodium lamps were features planned for the San Francisco Fair. Phosphorescent wall papers and paints appeared; also translucent plastics for novel luminaries.

Short-wave ultra-violet lamps continued to grow in usage for reducing the pathogenic organisms on utensils such as drinking glasses, or in the air in sick rooms, hospitals, and places of congested human occupancy, and to reduce spoilage of foods. In street lighting some 700 miles of mercury lighted thoroughfares further established the mercury lamp in Britain, while in the United States some 5,000 additional sodium vapour lamps were installed on highways.

French and British lighting education was advanced through reconstructed lighting demonstration rooms in numerous cities. Under governmental urge the manifold advantages of better lighting were being developed in Germany through the Light-Technical Society. New foot-candle standards issued in Britain went far to unify Western European standards, although American industrial foot-candle practice remained at considerable higher levels. Discussions at the Vienna World Power Conference of 1938 disclosed a constantly enlarging horizon for artificial lighting the world over, with no saturation of markets, nor stagnation of research remotely in sight.

ELECTRIC TRANSMISSION AND DISTRIBUTION. The art of electric power transmission over long distances was not significantly advanced in the year 1938 so far as actual installations are concerned, but research in direct-current transmission has been continued, and at least two projects are contemplated for the alternating-current transmission of hydroelectric power over distances greater than those of lines now in existence. These latter projects will undoubtedly utilize voltages in excess of the 287 kilovolts of the Boulder Dam–Los Angeles line in the United States, and so will represent pioneering farther into the domain of high-voltage construction and operating technique.

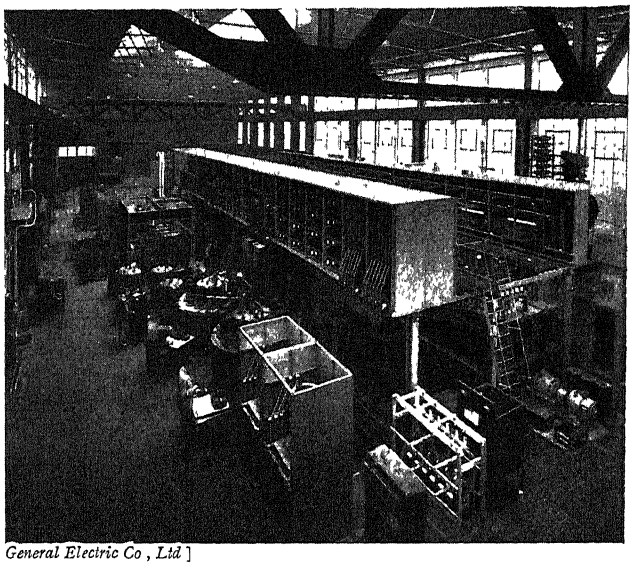
A new single-circuit line to operate in conjunction with the present double-circuit Boulder Dam line is now under construction and is scheduled to be put into operation during 1939. Bids for the steel towers and aluminium steel-reinforced cables for a 220-kilovolt line between the new Bonneville Dam and Vancouver, Washington, were placed during 1938. The 132-kilovolt British grid has been extended, and there has been a normal growth of high-tension mileage in France, Germany, Italy, Scandinavian Countries, and South Africa.

In the U.S.S.R. the carefully planned programme of power development and utilization has materialized phenomenally during the past ten years. High-voltage transmission is standardized at 110 and 220 kilovolts and the new equipment is getting to be more largely of Soviet manufacture. A very high proportion of the power transmitted is used in industry and an increasing proportion in agriculture. The general plan has been the development of centres of power production, and the more recent development of the plan has been the integration of these centres into an interconnected unitary system. The load factor on generating stations and transmitting facilities has risen to a high figure. One of the factors contributing to this high-load factor has been the adoption of Sunday working schedules and the regulation of factory loads to stabilize the load curves. The top of the evening peak was cut off appreciably by changing to daylight-saving time.

The 220-kilovolt cable line in Paris and the 132-kilovolt lines in New York and Chicago have continued their satisfactory operation and a 125-kilovolt cable line has been installed in Germany.

Notable advances have recently been made in reducing the cost of the production and distribution of electric power. These economies begin at the power house where topping, or superimposed, turbines utilizing steam at high pressures have made possible the production of 25 to 50 per cent more power with the same fuel consumption. The newer and more efficient stations and their associated transmission facilities are operated at high load factors and close to unity power factor, with the less efficient stations taking up the peak increments and the reactive power.

In distribution systems, economies have been effected in several ways. Perhaps the most noteworthy of these is the almost universal application in Great Britain of the tap-changing transformer to increase the utility of existing branches of the secondary and distribution grids. Practically all the large transformers have been fitted with tap-changing gear. The extension of this idea to smaller distribution transformers is now taking place rapidly. In these cases, a simple design of tap-changing gear with mercury switches is placed on the tops of the existing transformer tanks. New designs of induction regulators



General Electric Co., Ltd.]
NEW EXTENSION AT THE G.E.C. RECTIFIER WORKS, WITTON, BIRMINGHAM THE TEST BAY

with increased voltage ranges and kilovolt-ampere ratings have been developed in Germany and are being applied in several countries for purposes similar to that of the tap-changing transformer. Similar economies are seen in the United States in the application of tap-changing transformers and induction regulators and also of phase-shifting transformers.

In cable systems, a new temperature-indicating device, also developed in Germany, makes it possible to read the temperatures of the various sections of cable at a central point in order that the load dispatcher may safely load each cable section to the limit of its capacity.

Perhaps the most notable advance in the art of distribution in 1938 was the installation in New York City of a 15-kilovolt gas-filled cable. This cable has properties similar to the oil-filled type and its life in terms of sustained dielectric strength is expected to be between that of oil-filled cables and the ordinary impregnated-paper type.

Better power factors in both high- and low-tension lines have resulted from the further application of shunt static capacitors, thus reducing the power losses. In Berlin an important change has been made in the distribution system to allow greater loads. This change utilizes 4-wire 380-volt distribution in place of the 3-phase 220-volt system.

Greater continuity of service has resulted from better operating techniques and from the installation of protective devices. For example, in Britain a way has been devised to make additions to the 33-kilovolt secondary grid without interrupting the service. In the United States, the increasing adoption of protector tubes has produced a notable improvement in the reliability of distribution systems, and these tubes have been applied during 1938 to a 220-kilovolt system.

Rural electrification is receiving greater attention than ever before both in Europe and in America. The early solution to the problem was to provide small direct-current engine-driven generators with auxiliary storage batteries. More recently there has been an attempt to extend distribution to these communities from the more efficient steam and hydroelectric stations by means of transmission lines. The initial expense necessary to provide such transmission and distribution facilities evidently cannot, in general, be borne by the rural tenants, and for this reason government funding has played an almost decisive part in setting the

project in motion. In France, the government has provided over forty per cent of such financing In the United States, the Rural Electrification Administration has announced, during 1938, appropriations for power-line construction and wiring loans to be applied in the rural communities of 26 states. The total appropriation to date is $122 millions, of which these latest allotments constitute about $13 millions. It is estimated that more than 40,000 farm families now without electric power will be served by these new projects.

The protection and rapid repair of transmission and distribution systems in case of war are matters which have received attention during 1938, especially in Europe. In one country special crews are trained to wear gas masks and protective suits while working on the lines. (*See* also ELECTRIFICATION, RURAL.)

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ELECTRIC TRANSPORT of late years has been diversified into four main categories. These are: (1) electric trams and, in America, interurban railways; (2) electrically operated underground tubes and, in some countries, elevated lines; (3) electrified trunk line railways, (4) electric trackless trolleys or trolley buses. Another classification should perhaps be added to include (5) Diesel-electric buses and trains. While all these types of electric transport have certain points in common, their most recent developments have followed somewhat divergent lines.

Electric Trams. Although the electric tram was the first form of electric transport to be extensively developed, it has been more or less on the defensive in recent years as a result of the remarkable development of motor transport. In the first place, the private motor-car, through superior comfort and convenience, has drawn away a substantial amount of patronage. In the second place, the motor-bus, and more recently the trolley bus, through flexibility and economy, have won prominent places as substitutes. This applies also in the case of many interurban electric railways in America.

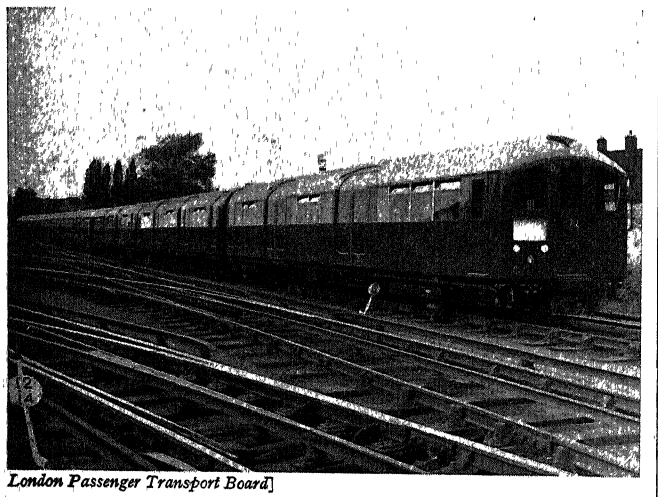
The extent to which these effects have been felt has varied in different countries, but it is not too much to say that they have been experienced to some extent everywhere. Among the larger cities of the world, for example, Paris has now abandoned all its surface electric lines, London is planning to abandon them, and New York has abandoned a considerable part of them In these cities, of course, the underground electric railways constitute the backbone of the local transport system. The motor buses or the trolley buses are used on the surface as feeders and especially for short journeys. In cities of medium and smaller size, motor buses and trolley buses have in numerous instances replaced trams in supplying all local transport service.

While there has been a substantial shrinkage in the mileage of electric surface-railway track in recent years, there is a strongly held opinion among many transport authorities that the electric tram still has definite advantages for handling heavy loads. For that reason a vigorous attempt has been made to modernize it and regain some of the business lost to other forms of transport.

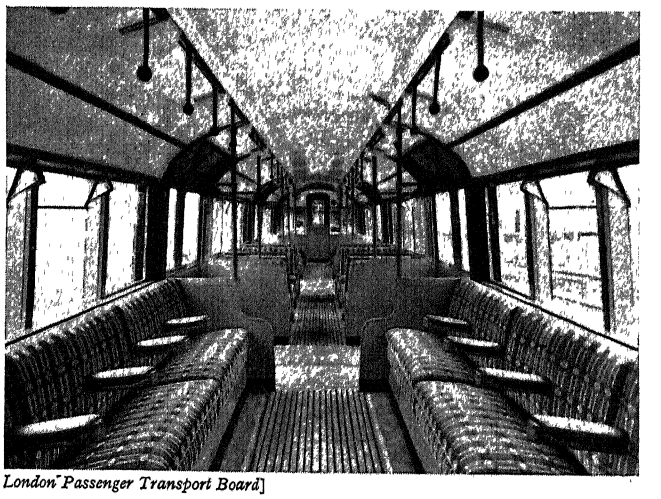
The first step in this direction was the development in the United States of a new type of light-weight, fast, silent tram or street car under the sponsorship of the Electric Railway Presidents' Conference Committee. Rubber springing and improved control and braking equipment are outstanding features of the design. Since the first cars of this type were built in 1936, a total of more than 800 have been placed in operation in ten cities in the United States and two in Canada. Revenue increases as high as 33 per cent have been obtained. Schedule speeds have been increased as much as 14 per cent. Noise has been greatly reduced and accidents have been fewer. A sample car of this type is now under construction in Italy, and keen interest in the design has been shown in numerous other countries.

Efforts to develop better trams or street cars, however, have not been confined entirely to the Electric Railway Presidents' Conference Committee. Fast, streamlined cars with unusually comfortable passenger accommodations have been put in service recently in Atlantic City, Cincinnati, Buenos Aires, Milan, Brisbane, Moscow, Oslo, and elsewhere. While it cannot be expected that these modernization activities will restore the electric street railways to the position they held before the advent of the motor-car, the resultant improvement in service has already won wide popular approval.

City Electric Railways. Recent developments in the field of electrically operated underground and elevated railways have been of particular interest. Experiments have been conducted with light-weight, articulated trains wherein adjacent car bodies are supported by a single truck placed between them, and with resilient wheels with rubber between the tread and the hub. A new type of car has been developed for use in Philadelphia in which many features have been introduced for the comfort of passengers. One



London Passenger Transport Board]
TRAIN BUILT IN 1938 FOR THE LONDON UNDERGROUND



London Passenger Transport Board]
INTERIOR OF LONDON UNDERGROUND TRAIN BUILT 1938

is a new arrangement for interior lighting, with continuous fixtures extending the full length of the ceiling on each side of the car over the seats. Another innovation is a changeable station indicator, installed below the ceiling opposite the centre doors. This is so arranged that it displays the name of the next station in illuminated letters. The metal box in which the sign is installed is fitted on both faces with electric clocks. New cars have also been purchased by the Interborough Rapid Transit Company in New York City and by the London Passenger Transport Board. The former are more or less conventional in design while the latter reflect the modern tendency toward streamlining.

Experiments began several years ago, both in London and in New York, with the use of long sections of welded rail to eliminate the noise and jarring that result from the passage of wheels over rail joints where the ends are not in close and accurate contact. The London Passenger Transport Board has now gone a step farther by attaching perforated asbestos board to the iron shells of its tube railways to absorb the noise of passing trains. It is said that the combination of welded joints and sound-absorbing linings has reduced the noise by about 65 per cent.

During the past year extensions have been made to the underground systems in New York, Philadelphia, London, Paris, Moscow, and Buenos Aires. A notable feature of the new Moscow underground is use of marble columns, polished steel, sculpture, and mosaics for decorative purposes. Construction of new undergrounds has been started in Munich and Chicago. Similarly there have been numerous extensions of trunk-line railway electrification, particularly on the continent of Europe, but they have involved comparatively few new technical developments.

Trackless Trolleys. Fastest growing of all the forms of electric transport is the trolley bus or so-called " trackless trolley ". Installations of this type were first made many years ago, but they did not turn out particularly well owing to limitations in the design of the vehicle. During the last ten years, however, many advances have been made in trolley-bus design and the newer vehicles are proving extremely satisfactory. About 2,500 of these trolley buses are now in service in Great Britain, while there are about 2,000 in the United States and Canada.

Many of the trolley-bus systems in operation in the United States and Great Britain have expanded their operations in recent years by the addition of more vehicles. The largest single system in the world is now that of the London Passenger Transport Board with 1,026 vehicles and 198 miles of route. An additional 159 miles of route, which has been authorized but not yet opened for traffic, makes the contemplated total for London 357 miles. The second largest system is that of the Public Service Co-ordinated Transport in New Jersey, with 583 vehicles and 287 miles of route.

From the technical standpoint the design of the vehicles operated by the Public Service Co-ordinated Transport is particularly interesting. Under the name of " all-service vehicle " this company operates a combination trolley bus and petrol-electric motor bus using either its own power or power obtained from overhead electric wires. The added cost and extra weight involved in having duplex sources of power, however, will probably tend to limit the use of this type of vehicle to places where great flexibility is desired.

Petrol-electric and Diesel-electric Transport. Although petrol-electric and Diesel-electric vehicles are not forms of electric transport strictly comparable with those already mentioned, they have some points in common with them. The petrol-electric bus was first developed about ten years ago to get away from the frequent gear shifting required in the operation of mechanically-driven buses in frequent-stop service. While the early petrol-electric buses were successful in accomplishing this purpose, they had some rather serious disadvantage owing to the fact that the generator output was not sufficient at the most economical speed of the petrol engine. With the development of the Diesel engine, however, it became possible to accomplish the desired result more satisfactorily. Some 200 Diesel-electric buses are now in operation in the United States and Canada.

Of particular interest is the development during the past year of a Diesel-electric bus of virtually the same capacity as the ordinary tram. To make possible the operation of a unit of this size, the vehicle steers with both front and rear axles and is hinged in the middle to accommodate changes of street gradient.

Diesel-electric power has been widely used in recent years for the operation of shunting engines at railway termini. The same type of power has also been used for many high-speed passenger trains such as the Burlington's " Zephyr ", and Santa Fe's " Super Chief ", and others.

World's Largest Tramway Systems

(Jan. 1, 1939)

Name of System	Number of Cars	Miles of Track
Chicago Surface Lines	3,669	1,111
Städtische Strassenbahnen, Vienna	3,370	178
Berliner Verkehrs-A.-G.	2,996	358
Anglo-Argentine Tramways, Buenos Aires	2,931	380
Philadelphia Rapid Transit Co.	1,946	615

World's Largest Trolley-bus Systems

(Jan. 1, 1939)

Name of System	Number of Trolley Buses	Miles of Trolley-bus Route
London Passenger Transport Board	1,026	198
Public Service Co-ordinated Transport, N.J.	583	287
Mostramvaitrest Raduskaya, Moscow	389	not available
Indianapolis Railways	152	96
Chicago Surface Lines	152	54

City Electric Railway Systems of the World (Underground or Elevated)

(Jan. 1, 1939)

	Miles of Track	Cars		Miles of Track	Cars
Barcelona *	37	92	Moscow	33	128
Berlin	215	2,372	Munich	Under construction	
Boston	55	528			
Buenos Aires *	22½	204	New York †	1,006	8,408
Chicago	202½	1,640	Paris	89	2,664
Cleveland	29	34	Philadelphia	73½	546
Elberfeld	8	67	Prague	Under construction	
Glasgow	13	50			
Hamburg	50	328	Sydney	2½	No data
Liverpool	13½	57	Tokyo	10	20
London	487	3,189	Vienna	87	483
Madrid	12	144			

* Total for three systems.
† Total for five systems.

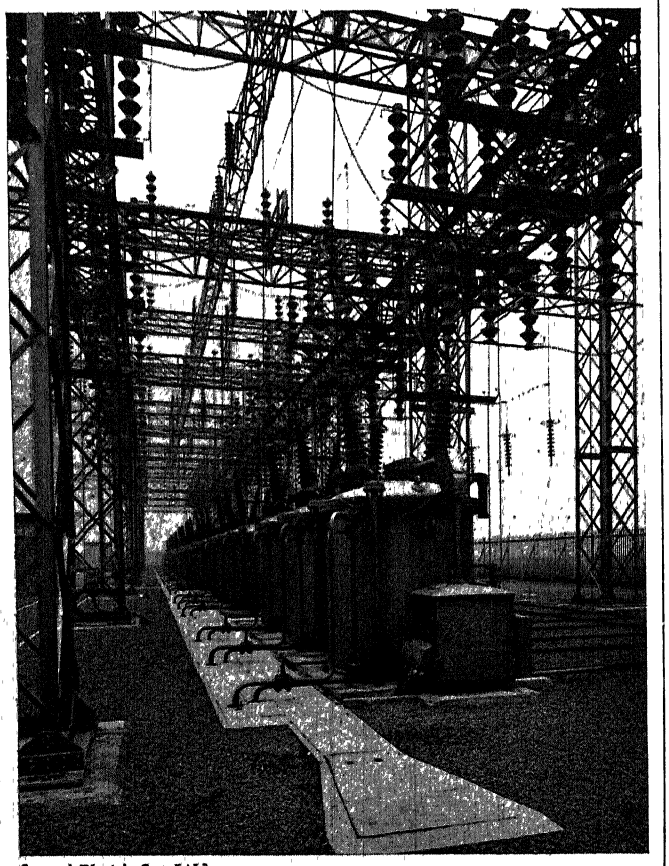
ELECTRIFICATION, RURAL. In Great Britain, progress resulted from the gradual extension of rural electric distribution lines It is estimated that more than 36,000 farms were receiving electricity in 1938 This figure may be contrasted with 30,000 in 1937, 25,000 in 1936, and 4,000 in 1932. Since in Great Britain there are reported to be nearly 450,000 farms and small holdings of over 1 acre, it will be seen that only a small proportion of the total is as yet connected

During the latter part of 1936, and in 1937, sharp increases in the price of materials and a shortage of supplies impeded the extension of rural lines The subsequent fall in the prices of conductor, poles, and supplies served to accelerate construction in the latter half of 1938.

The British Electrical and Allied Industries Research Association reports that it has taken the first step towards the centralization and co-ordination of research, experimentation, and development in rural electrification in opening a new department to deal with this subject. Rural electrification in Great Britain has been in a trial period, but it is anticipated that developments under way will result in its expansion along many lines. It is hoped that the extensive research now under way will lay a firm foundation for future progress.

In connexion with the rearmament programme and the decentralization of industry resulting from threats of war, it is interesting to note that quite a number of small new industrial enterprises, including aerodromes and munition works, were added during 1938 as customers of rural electric lines.

In the United States, increased Federal funds available for rural electrification, and a substantial increase in the number of rural customers served by government financed lines, marked the progress of rural electrification in 1938. There was a substantial amount of rural line construction by the private utilities, although the 1938 total fell considerably short of the 40,000 miles constructed in 1937 It is estimated that over 1,450,000, or 21 per cent, of the farms in the United States were receiving service on Dec. 31, 1938—an increase of over 200,000 for the year.



General Electric Co., Ltd.]

HAMS HALL SUB-STATION, BIRMINGHAM, WITH NINE 1,500,000 K.V.A. OUTDOOR-TYPE OIL CIRCUIT BREAKERS, 132,000 VOLTS

The satisfaction of farmers with their new electric service produced such a demand for assistance in electrifying unserved rural areas that the 75th Congress voted $100 millions in addition to the $40 millions envisaged in the Rural Electrification Act of 1936, for loans for rural electrification in the fiscal year ending June 30, 1939.

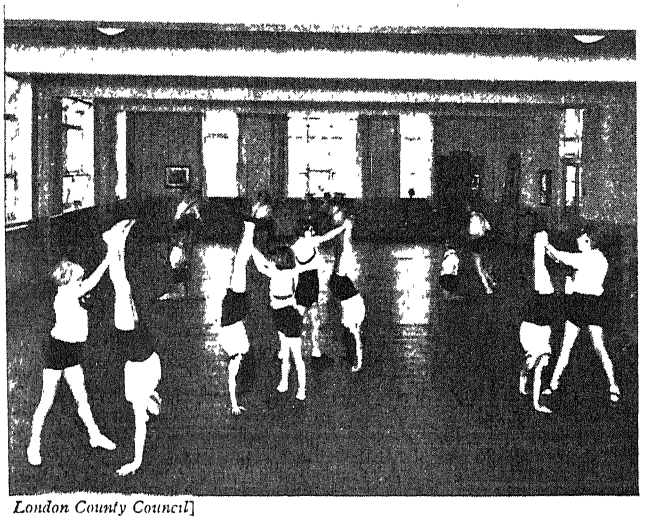
It is estimated that at the end of 1938 there were over 150,000 customers receiving electricity over lines financed by the Rural Electrification Administration. Over 100,000 of them received electricity for the first time in 1938. Prior to the Federal government taking an active part in assisting the farmer to obtain electricity, practically all farms served with electricity were served by private utilities. As a result of the activities of the Tennessee Valley Authority and those of the Rural Electrification Administration, a small but increasing percentage of farms are being served by farmer-owned and controlled distributing systems.

Increasing emphasis during the year was placed upon developing increased use of electricity in rural areas. The need to adapt many kinds of farm equipment to electric power was recognized. New uses were found for electricity and there was a marked increase reported in the sales of electric equipment in the rural areas.

ELEMENTARY EDUCATION. The most active developments in elementary education in Great Britain during 1938 are associated with the national campaign for children's health and the setting up of the National Fitness Council. Expenditure incurred by the local education authorities in providing or aiding the provision of gymnasiums, playing fields, community centres, recreational institutions, and other similar facilities for social and physical training now ranks for a fifty per cent grant from national funds.

While these facilities are intended for older children and for adults, the elementary schools have felt the benefit. New schools are providing open-air class-rooms, gymnasiums, playing fields, and provision for meals. Camp and holiday schools are increasing. The milk scheme, which provides cheap milk for school children (free milk in necessitous cases), is becoming universal, and already ninety per cent of the children are in schools operating the scheme. In London, a three-year programme includes the provision of a green belt of playing fields, with class-room accommodation, so that all pupils may spend one whole day each week as much as possible in the open air.

Yet the battle is far from being won. There are still over 900 black-listed schools surviving from the deplorably low standards of the past, and many more nearly deserve this condemnation. Nursery schools grow with disappointing slowness and number only about a hundred. The head master of a school in South Wales has drawn a haunting picture of the children in a Special Area, " underfed, poorly clad, badly shod. . . . The children of these valleys of forgotten people do not know what real childhood means. They have no presents and no toys; they have neither Sunday dinner nor Sunday clothes. . . . Their homes are mere hovels." Statistics may show an average improvement, but some children get none of the advantages.



London County Council]
PHYSICAL TRAINING AT A SENIOR ELEMENTARY SCHOOL

The task of reorganizing the elementary school, begun ten years ago, is still proceeding. In rural areas, only 38 per cent of the children are affected; in urban areas the percentage is twice as great. The difficulties are greater than was anticipated. slum clearance schemes necessitate new schools, and the dual system makes re-planning more complicated. The Act of 1936 raises the school-leaving age to fifteen after Sept. 1939, but exemption at fourteen may be granted by the local authorities. There is now a large measure of agreement between the authorities defining the conditions governing such exemptions, many occupations have been declared undesirable, and the authorities will impose requirements of facilities for further education and restrict the hours and conditions of work in permitted occupations, so that the employment of children under fifteen may turn out to be exceptional.

The expense of building new schools, or altering old ones, led the Board of Education to raise the building grants to the local authorities from twenty to fifty per cent in the case of contracts entered into by Dec. 1940. The local authorities, faced with rising prices, pleaded that the time allowed was too short, and the Board has extended the period for three years "where an authority could show that it had made reasonable progress with the task of reorganization before the original date."

To meet the new burden placed on religious bodies which provide their own school buildings, the Act of 1936 empowered local authorities to make building grants to religious bodies for new schools and alterations. Such grants may be from 50 to 75 per cent of the cost. Schools assisted in this way would still be denominational, and managers are allowed to apply for a number of teachers to be "reserved", so that the particular religious instruction given in the school may be safeguarded.

In most places the arrangements made between local authorities and religious associations have been in accordance with the Act. The general solution is that an authority makes a grant of 75 per cent, and allows the number of "reserved" teachers to be determined by the number of children for whom the religious instruction specified in the trust deed is required. But in a few districts the authorities have refused grants, and in Liverpool an acute situation has arisen. The voluntary schools in the dockside area, many of them black-listed several years ago, are said to be in an appalling state, and the Board is demanding immediate action. The Roman Catholics declare their inability to build without grants, and the city council refuses to make grants. The Board is not satisfied with the Council's proposals, and has taken the unusual step of "withholding" a part of the education grant as a penalty for delay. Already £90,000 has been withheld; in a full year the amount will be twice that sum. The feeling that has been aroused threatens to make council schools in Roman Catholic districts an unpopular provision

It is hardly surprising that the magnitude of building programmes, the work of reorganization, and the preparations for raising the school-leaving age should have almost completely engrossed the attention of educationists. The complaint has been expressed that the content of education receives little notice. Mr. H. G. Wells in 1937 attracted much discussion by his plea for a curriculum designed "to give future citizens a picture of the world to which they have to go". At the 1938 meeting of the British Association, he returned to the attack A Committee of the Association had made inquiries in the schools, and Mr. Wells, expressing his dissatisfaction with the result, paraphrased the replies as "we teach, but we don't teach anything definite. Teaching is the important thing, not what is taught". The complaint is unfair. The curriculum is actually more under discussion than ever. Physical education has made remarkable progress, and its content is much better organized. Science teaching is becoming more general with the provision of laboratories in the new schools, and the content is certainly more closely related to modern life. History and geography have been considerably influenced both by the trend of world events and by such bodies as the Association for Education in Citizenship. Mr. Wells gives the impression that he wants a uniform syllabus in every school; the teachers prefer the view frequently expressed by the Parliamentary Secretary to the Board of Education, that the new senior schools should be left free "to mould their curriculum to meet the needs of modern society".

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EMIGRATION: *see* POLITICAL MIGRATIONS AND REFUGEE MOVEMENTS.

ENDOCRINOLOGY. The Endocrine Basis of Diabetes. Recent years have seen a great increase in our knowledge of factors concerned in the disease commonly known as diabetes and more precisely as *diabetes mellitus*. It is now possible to draw some general conclusions.

The chief symptoms of the disease are intense thirst and increased appetite, often associated with a fall of body weight and considerable wasting; the amount of urine excreted daily is greatly increased and the urine contains abnormal constituents—glucose (dextrose or grape sugar) and the so-called "ketone bodies". The "ketone bodies" are *beta*-hydroxybutyric acid ($CH_3CHOHCH_2COOH$), acetoacetic acid (CH_3COCH_2COOH), and acetone (CH_3COCH_3). Glucose, together with a trace of *beta*-hydroxybutyric and acetoacetic acids, is normally present in the blood, but in *diabetes mellitus* the amount of glucose and of "ketone bodies" present in the blood substantially increases.

Untreated *diabetes mellitus* is often fatal, death being due to the toxic effect of the "ketone bodies" which accumulate in the blood and tissues. Because *beta*-hydroxybutyric and

acetoacetic acids are acidic substances, a condition of "acidosis" is usually found.

Pancreas. The treatment of *diabetes mellitus* by the subcutaneous injection of the hormone "insulin" has been strikingly successful. This hormone was discovered by Banting and Best in 1922, and its introduction into medical practice completely revolutionized the treatment of diabetes. The injection of insulin into a diabetic patient causes a rapid diminution of the amount of sugar in the blood and, under suitable circumstances, in the complete disappearance of sugar and "ketone bodies" from the urine. If a large dose of insulin is given, the amount of sugar in the blood may fall considerably below its normal value (0·1 gm. per 100 c.c) and "hypoglycæmic convulsions" may ensue. As the condition of hypoglycæmia following a large dose of insulin may prove fatal, it is necessary to ensure that the amount of insulin and the amount of sugar-forming food given to a diabetic patient are so balanced that the amount of sugar in the blood never falls far below its normal value, nor indeed ever rises very far above it.

The effect of a single injection of insulin passes off after a few hours, but recently Hagedorn has introduced a combination of protamine and insulin which is absorbed from the subcutaneous tissues much more slowly than ordinary insulin, and therefore acts for a much longer time. A mixture of zinc salts with protamine and insulin, which acts for a longer time than Hagedorn's protamine mixture, has been recently prepared by D. A. Scott of Toronto.

Insulin was obtained in a crystalline form by Abel in 1926; it appears to be a protein, and all attempts to degrade it into smaller molecules which retain its activity have so far failed. Recent work has shown that zinc is normally present in crystalline insulin to the extent of about 0·5 per cent, and preparations of insulin which are free from zinc and a small number of other specific metals cannot be obtained in crystalline form.

There is good evidence that insulin is an internal secretion of the islets of Langerhans of the pancreas. The isolation of insulin from the pancreas, and the successful treatment of *diabetes mellitus* by this substance, provide evidence for the theory that diabetes is due to deficient secretion of insulin by the islets of Langerhans. Recent experimental evidence has shown that such a simple theory cannot explain all the facts.

Pituitary Gland. In 1930–31 B. A. Houssay and his collaborators clearly demonstrated that experimental diabetes, produced by surgical removal of the pancreas, may be substantially attenuated or even apparently cured by removal of the *Hypophysis cerebri*, or pituitary gland. The pituitary gland is divided into anterior and posterior lobes, and the removal of the anterior lobe in a number of species of animal is as effective in diminishing the severity of experimental diabetes as removal of the whole gland. As a corollary to Houssay's observations, it has been found that the injection of extracts of the anterior lobe of the pituitary gland into normal animals can produce a condition similar to human diabetes, and it has proved possible to produce a permanent condition resembling *diabetes mellitus* by treatment with pituitary extract for only a short period. The evidence available at present suggests that the secretions of the anterior lobe of the pituitary gland and of the pancreas act antagonistically on the metabolism of sugar, and that the derangement of metabolism recognized as *diabetes mellitus* may result either from a deficiency of the internal secretion of the pancreas (insulin) or from a greatly increased secretory activity of the pituitary gland.

When an animal is treated with a suitable pituitary extract it becomes insensitive to the action of insulin, and the administration of a large dose of insulin to such an animal is followed by little or no fall of the blood-sugar level. The recent demonstration that blood from particular cases of *diabetes mellitus* resembles pituitary extracts in ability to inhibit the action of insulin provides strong support for the belief that some cases of *diabetes mellitus* are not due merely to a deficient action of the islets of Langerhans, but probably due to an over-functioning of the pituitary gland. Nothing is yet known as to the nature of the active substances secreted by the anterior pituitary gland.

Adrenal Glands. The adrenal glands are also concerned in the metabolism of carbohydrate. These organs, usually two in number, resemble the pituitary gland in consisting of two distinct portions. The inner part—the adrenal medulla—secretes *adrenaline*, a substance which has been obtained in crystalline form and which has many powerful pharmacological actions. The injection of adrenaline into a normal animal causes, among other effects, a rapid rise of blood sugar-level, and it is believed that variations in the rate of secretion of adrenaline by the adrenal glands assists in controlling the level of the blood-sugar. Nevertheless, an animal may be completely deprived of adrenal medullary tissue without exhibiting any very obvious symptoms.

The outer portion of the adrenal gland—the adrenal cortex—is, on the other hand, a tissue, the presence of which is essential for the life and well-being of a normal animal, and removal of the adrenal cortices usually results in death within a comparatively short time. During the last few years extracts of the adrenal gland have been prepared which contain the relevant hormone, *cortin* or *corticosterone*. Frequent administrations of this hormone can keep an animal alive indefinitely after both adrenal glands have been removed. Recently it has become clear that removal of the adrenal glands results in the attenuation of the symptoms of experimental diabetes, and this effect is apparently due to removal of the cortical tissue and not the adrenal medullæ. If an animal is deprived of both adrenal glands and given frequent injections of the hormone of the adrenal cortex in such amount as to keep it alive indefinitely, subsequent removal of the pancreas produces a much less intense diabetes than normal. An animal from which the adrenal glands have been removed and replaced by suitable daily injections of the hormone will survive removal of the pancreas much longer than a normal animal.

The recent demonstration that the administration of crystalline corticosterone to normal animals may result in striking changes in the amount of carbohydrate (glycogen) stored in the tissues, strengthens the belief that the hormone of the adrenal cortex is intimately concerned with the control of sugar metabolism. The mechanism whereby the adrenal cortex exerts its striking effects on the general metabolism remains to be determined. (A. S. Pa.) (F. G. Y.)

ENGINEERING. For articles on engineering subjects: *see* AERONAUTICS; AIR CONDITIONING; BRIDGES; CANALS AND INLAND WATERWAYS; CANNING INDUSTRY; DAMS; ELECTRICAL ENGINEERING, *et seq.*; GAS; IRRIGATION AND FLOOD CONTROL; MACHINERY AND MACHINE TOOLS; MOTOR VEHICLES; PUBLIC HEALTH ENGINEERING; RADIO; RECLAMATION; REFRIGERATION AND HOUSEHOLD REFRIGERATORS; SHIPBUILDING; TELEGRAPHY; TELEVISION; TUNNELS; WATER POWER; WATER SUPPLIES.

ENGLAND: *see* GREAT BRITAIN AND NORTHERN IRELAND, UNITED KINGDOM OF.

ENGLISH LITERATURE. One of the most charming books of 1938 was *The Silent Traveller in London*, by Chiang Yee, a Chinese gentleman. He had some pertinent things to say about the state of current literature in England. "Publishers", he says, "seem to encourage authors to write strongly on the topical subjects as if they were journalists getting news for papers. And publishers, authors, and journalists seem to work together to cater for a public avid over current events. For instance, during the Italo-Abyssinian war, a vast number of books came out on Abyssinia as well as on Italy in about six months, and then on Spain, Austria, China, Japan, Germany, and now Czechoslovakia and Poland. It seems as though, if there were not so many aggressors, publishers, authors, and journalists might die from starvation! It's an ill-wind that blows no one any good".

The diagnosis is incomplete. The publishers are but a medium. The public follows its dominant interests and will read those writers who share them and have the relevant information. Poets, to-day as ever, are doubtless born; but they have to be made as well. If, during 1938, there was little first-class writing on enduring themes and very little poetry, if the elder poets (with the exception of Mr. de la Mare) were almost silent, there are many contributory causes. Some authors capable of non-ephemeral work are obsessed into surrender, some oppressed into silence, some, perhaps, merely do not publish for lack of an audience. At all events, the fact is there, and the scene in 1938, as in the years immediately preceding it, was largely dominated by books about the political turmoil.

Amid the swarm of these a few stand out. For sheer power of writing, variety of interest, and mingling of the flavour of personality with objective record, Mr. Bruce-Lockhart's *Guns or Butter?* stands out above the rest. He has, in a succession of books, mingled personal autobiography with the changing political scene—this one deals largely with Czechoslovakia since the war. He is no violent partisan about systems, except in so far as they work cruelly or kindly, efficiently or inefficiently; and it is probable that the historians of the future may find the books of this gifted, humane, and humorous vagrant more helpful towards a recovery of our day than many books more intensely political, controversial, and documented. Amongst the horde of books which were rushed into print with impressions while they were still fresh were Mr. Douglas Reed's *Insanity Fair*—a title which had reference to Europe in general and Germany in particular—and Oscar Dutch's *Thus Died Austria*. A journalistic-literary experiment of a novel kind, and extremely effective, was *Four Days*, edited by Lord Killanin. The "four days" are those days in September when the fate of Europe and the world hung in the balance, while the leaders of the great Western powers were having their final talks, and no man, save perhaps Herr Hitler, could be sure whether at the week's end peace, at least for a time, would be saved, or once more the lands would be ravaged, the cities bombed, and millions of young men would march to a fruitless death. The editor conceived the notion of collecting from qualified observers in the capitals chiefly concerned their impressions of those fateful days while their memory was still vivid in the public mind and their own: an extraordinary expedition was shown in the publication of the book.

Historical, biographical, and autobiographical books were even more numerous, and, in many instances, as popular. These sharp divisions into categories are rather arbitrary; what is there in common, except that they are each written around a single personality, between Miss Yvonne ffrench's delightful study of Ouida and R. J. Mitchell's monograph on the little-known but important fifteenth-century statesman John Tiptoft? Into whichever pigeon-hole it may be pushed, there can be no doubt that the last volume of Mr. Winston Churchill's *Marlborough* was the most outstanding work of the year in each category. Marlborough in the last stages of his military career (which included Malplaquet) is portrayed powerfully and fairly, and his personal vindication continues; but even were Marlborough in the background, the work would be memorable because of its brilliant pictures, and skilful disentanglements, of the squalid and complicated domestic politics of Queen Anne's reign. A great book was brought to a memorable close.

H. Montgomery Hyde's book on Princess Lieven drew attention once more to that extraordinary figure, who naturally reappeared in F. K. Reichenberg's *Prince Metternich in Love and War*. Two eminent figures of the age of Louis XIV were admirably discussed in J. Lewis May's *Fénelon*, and Sir Reginald Blomfield's *Vauban*, in which the knowledge of a great architect helped to illuminate the work of a great military engineer, who was also a noble and modest character.

Two of their English contemporaries biographized were Sir John Vanbrugh, by Laurence Whistler, who showed a versatile understanding of that versatile man, and Samuel Pepys, the third volume of whose *Life*, by Arthur Bryant, bore out, in point of narrative power, legitimate advocacy, and original research, the promise of its predecessors. *Further Letters of Queen Victoria* (to the House of Brandenburg-Prussia), edited by Hector Bolitho, was an interesting supplement to our knowledge of its period; so also was the fourth volume of *Lord Esher's Journals and Letters*, whose many-talented writer preferred to be a universal confidant and adviser behind the scenes rather than to parade, even in the largest parts and the grandest array, before the footlights.

Two studies of former social life, both excellent in their kind, were *The Three Ladies Waldegrave* (illustrated by some excellent eighteenth-century portraits) by Violet Biddulph, and *The Ladies of Alderley* by Nancy Mitford, whose introduction, deft to say the least, was perhaps even better than the main body of the book, which erred on the side of copiousness. The lives described in those elegant pages make a strange contrast to that once again, and very well, depicted in *Madcap's Progress* by R. Darwall. This was the life of John Mytton, that incredibly brave and enduring rake and wastrel, who ran through a vast fortune, thought nothing of riding fifty miles each way to a meet after a heavy night, astonished dinner-parties by riding into their midst, steeple-chased with tandems and, not surprisingly, died young and in misery. One more contrast from the earlier nineteenth century, that various epoch, was effected by Alice Brunel Nobel's *The Brunels, Father and Son*, in which justice was done to a remarkable dynasty.

Literary biographies were not numerous. Miss ffrench's *Ouida* has already been mentioned. It was a brief, but able and timely, book. "Timely", because Ouida, in so far as she has not been forgotten, has become, quite wrongly, a mere figure of fun, to whom the fatuities of lesser novelists are often ascribed. Miss ffrench convincingly sets her real powers over against her absurdities and vanities, and points out the power especially of her literary criticism—she was, for instance, the first English critic to

detect and analyse with prophetic acumen the genius of the young d'Annunzio

A strange eccentric politician, traveller, and poet, who drank life to the dregs in many ways, found an ideal biographer in Edith Finch. This was Wilfrid Blunt, squire of Crabbet, author of *Esther*, breeder of Arabs, agitator in Ireland and Egypt, and friends at home with the most brilliant members of the party which he most vilified, from Curzon to George Wyndham. A more modern figure, who was killed in the War, was the subject of Michael Roberts' *T. E. Hulme*. Hulme, who wrote little save some philosophical and metrical fragments, so impressed his contemporaries by the width of his knowledge and the brilliance of his Johnsonian-cum-Coleridgian-cum-Rabelaisian talk, that he has become a legend to his juniors; and it is a tribute to the force of his mind and personality that his life should have at last been written by a devout, though not undiscriminating, student who never set eyes on him. A still more puzzling, though scarcely comparable, character was *Janus Weathercock*, whose life was written by Jonathan Curling, very entertainingly. This person, one of the strangest in the annals of English literature, was Thomas Griffith Wainwright, grandson of the respectable founder of the *Monthly Review*. After being an officer in the Guards, he took to essays and art criticism, being an acquaintance of Charles Lamb. This being insufficiently lucrative, he became first a forger, then a wholesale poisoner for insurance money, then a transported convict, then a Tasmanian portrait-painter.

A musical biography worth recording was Martin Cooper's *Bizet*. At this point it may be suitable to mention Percy A. Scholes's *Oxford Companion to Music*, an amazing reference book which, in spite of its vast compendiousness, is so readable that it deserves to be classed as literature rather than with Lamb's *Biblia a-biblia*.

In the more autobiographical kind a full, exciting, and beautiful book was Walter Starkie's *The Waveless Plain*, in which the author of *Raggle Taggle*, who drinks in experience at every pore, mixes and fiddles with all sorts and conditions of men, recovered pictures of Italy in war and peace, and not only of the Lombardy to which his title refers. *The Old Century and Seven More Years* by Siegfried Sassoon continued (backwards) the adventures of *Sherston*, and was full of poignant glimpses of a vanished childhood and boyhood. *Without Knowing Mr. Walkley* was the pathetic title of a slight but delicate volume of memoirs by Edith Olivier; *Where Fancy Beckons* was a ripe and charming retrospect by H. A. Vachell; the playwright John van Druten pleasantly achieved the difficult task of a young man's autobiography in *The Way to the Present*, and Philip Jordan's *There is no Return* was notable for the strength of the writing and the obstinate clarity of its outlook. James Agate's *Ego III*, was one more draught from the exuberant fountain of an acute observer who frequents many worlds and enjoys life to the full.

Among travel-books and their kind it is tempting to put first (new discovery of an old thing though it be) one more volume of the diaries of Lord Torrington, kept in the late eighteenth century. Honest John Byng, with his horse and his water-colour box, his insatiate passion for wandering over England, his interest in everything from hotel-bills to Gothic ruins, his love of the rural past and loathing of industrialism, has crept into the position of an English classic. F. S. Smythe's *The Valley of Flowers*, about a Himalayan paradise, was one of those tantalizing books which make one "wish one were there". Philip Gosse's *St. Helena*, picturesque and quietly humorous, contained a timely plea for a neglected colony of great historical and æsthetic interest; Edward Shanks's *My England*, though slight, was written as a poet should write, and Mr. Sacheverell Sitwell was agreeably exotic on Rumania.

The appearance of *In Search of the Gyr Falcon* by "Ernest Lewis" was a sad reminder of the loss of one who was a gallant rider to hounds (after disablements which would have retired anyone else), a fine naturalist, a born traveller and observer, whose early death, after a full-blooded career, probably robbed us of many fine books. Finally, Mr. Louis McNeice's *Zoo*, gay and easy to read, might as well be described as a travel-book as anything else: when he is not travelling in the Zoo he travels wherever fancy takes him.

Miscellaneous works deserving special notice included *A History of Welbeck Abbey and its Owners* by A. S. Turberville (an excellent supplement to the Duke of Portland's own captivating books), *The Importance of Living* by Lin Yutang, and a strange, penetrating, amusing, sad book about Oxford, *The Oxford University Chest*, by John Betjeman. Of pure literary criticism there was little, but Dame Ethel Smyth plunged into the contemporary arena vigorously in her study of Maurice Baring.

In poetry, as has been remarked, very little attracted attention. But there should be mentioned Walter de la Mare's *Memory and other Poems*, *Solitude* by V. Sackville-West, *Verses* by Elizabeth Daryush, *Overtures to Death* by C. Day-Lewis, and *Penthesperon* by Christopher Hassall, an extremely promising and versatile book.

The casual essay, so characteristic an English institution since Bacon and Cowley, Addison, Steele and Johnson, Lamb and Hazlitt, was lamentably absent. Twenty years ago any season might see the appearance of delightful collections by Augustine Birrell, Maurice Hewlett, Max Beerbohm, H. Belloc, G. K. Chesterton, Maurice Baring, Robert Lynd, and E. V. Lucas. "E. V." died during the year, leaving a few unpublished papers and a little volume, *A Hundred Years of Trent Bridge*, suitable last legacy from a kindly Englishman who was a cricket-lover all his life and, in his youth, no mean player. And in Mr. Belloc's *Return to the Baltic* there was enough of the old independent essayist to enchant his old readers.

There was the usual tremendous output of novels, mostly very perishable commodities. There is no inclination as yet to place any of their juniors on the pedestals left vacant by Conrad and George Moore, Arnold Bennett and Galsworthy. H. G. Wells was lively as ever in *Dolores*, and Sir Hugh Walpole exhilarating in *The Joyful Delaneys*. *Brighton Rock*, by Graham Greene, was a caustic exposure of gangsterdom in Brighton, and A. G. Macdonnell, in *The Autobiography of a Cad*, exhibited all his customary wit, humour, and brilliance of style, though the satire was rather exaggerated and the bitterness seemed unnatural to so high-spirited an author. *Rebecca* by Daphne du Maurier and *O Absalom* by Howard Spring were successes which deserve their success. But possibly the two most notable novels of the year were *This Was a Man* by D. Pilgrim (an extremely powerful and scholarly study of Napoleon in the Walewska period) and R. C. Hutchinson's *Testament*, an impressive picture of the last struggles of the old Russian Army and the years of revolution which followed. To these may be added two others, one the work of a veteran craftsman, one of a novice: A. E. W. Mason in *Königsmark* excelled himself as an historical novelist; while David Hussey's *No Sting, No Honey*, a mixture of Rider Haggard romance and rollicking wit at the expense of extreme feminism, will be read many times by those capable of enjoying it once.

Memorable new editions of standard works were few. The trend of the times is against them and the expense of production also, apart from which we cannot go on re-editing people for ever. But two at least must be mentioned: *The Greville Memoirs* 1814–1860 was an unexpurgated edition (with the "new" passages by no means startling) launched under the editorship of Roger Fulford, who "took over" from the late Lytton Strachey—whose first familiarity with the complete MS. dated from his preparations for *Queen Victoria*; and Mr. Edward McCurdy produced a magnificent and presumably final, edition of Leonardo da Vinci's *Notebooks*. (J. C. Sg.)

ENTERIC FEVER: *see* INFECTIOUS DISEASES, ACUTE.

ENTOMOLOGY. The notable event of 1938 in entomology was the Seventh International Congress of Entomology held in Berlin, from Aug. 15–20. Attending the congress were 351 delegates from the various countries of the world. The largest delegations came from the British Isles, France, Holland, and the United States. Over 1,000 individuals actively interested in entomology registered at the congress.

The papers read before the various sections of the congress were bewildering in the variety of subjects discussed: they dealt with all aspects of entomology, through nomenclature, bibliography, morphology, physiology, embryology, genetics, and ecology to all phases of applied entomology. The last occupied a large proportion of the time and interest of the congress, since the intimate relation of insects to the welfare of mankind is becoming more clearly and more widely recognized.

Insect Palæontology. Research in all phases of entomology has proceeded with great zeal and energy, despite the world-wide social and economic disturbances. Perhaps the most impressive phase in which advance in knowledge of the science has been made is in insect palæontology. Dr. A. D. Imms in a recent survey points out that the fossils found in the rocks of the Permian and Triassic beds "have revealed so remarkable an insect fauna that our whole outlook has undergone marked changes". The strata of rocks from which specimens revealing this new knowledge have been taken are situated in Queensland and New South Wales, Australia, in North Russia, and in the State of Kansas in the United States. The rocks in Kansas have furnished, perhaps, the most perfect fossil insects, which have contributed so largely to the recent advance in knowledge of the evolution and development of the orders of the *Insecta*. Imms points out the very interesting fact, however, that "We are still faced with want of direct evidence from fossils with regard to the two most important problems of insect phylogeny, *viz.* the origin of insects as a class, and the origin of wings". Persistent search for further fossil remains may yet reveal the answer to these absorbing questions—Through what primitive forms did insects develop, and how did wings evolve?

Hormones. In another direction, comparatively recent investigations have shown that insects are endowed with those remarkable gland secretions known as hormones. Notable additions to the knowledge of these active agents in insects have recently been made. A series of experiments, recently reported, seem to prove the presence of a hormone in the body of the ubiquitous fruitfly *Drosophila melanogaster*, that has the power of changing the colour of that insect's eyes. The investigators demonstrated that tiny injections of a clear yellow fluid, derived by treatment of finely ground pupæ of the wild type of fly into certain colour-type larvæ, produced adult flies with eyes modified from nearly colourless and pale pink towards brown. The hormone appears to be very active, for the authors estimate that "1 gm. of the material would be sufficient to modify the eye colour of 4,200,000 flies".



H. E. Tyndale]

A CLUSTER OF PHROMNIA · INSECTS FOUND IN ASSAM, WHICH, IN MASS, RESEMBLE WHITE BLOSSOM AND SO ESCAPE THEIR ENEMIES

Locusts and Grasshoppers. Another important entomological meeting of the year was the International Locust Conference, held in August in Brussels. Similar conferences have been held in Rome, 1931; Paris, 1932; London, 1934; and Cairo, 1936. These conferences, attended by delegates from the various countries of the world, are notable because they attest the widespread distribution of locusts and the seriousness of their devastations.

One of the questions perennially before the conferences is the extent to which activities in the practice of agriculture and the grazing of stock affect the distribution and mass appearance of locusts and grasshoppers. One school of thought holds that the insects are dangerous only in those countries with a low level of agriculture, and that they become less injurious as such regions become more highly developed. The contrary view maintains that certain species of locusts and grasshoppers have increased with man's activities, and that therefore the general development of a country holds out little hope of lessening the danger from these insects. Probably there are not adequate data extending over a sufficiently long period of time to answer the question with any degree of finality.

From South Africa Dr. J. C. Faure reports that during the summer season of 1937–38 the brown locust, *Locustana pardalina*, infested an area in central Cape Province of 20,000 sq. miles, and that about 1,800 tons of poison bait were distributed at a cost of about £52,000. During the 1938–39 summer season, owing to the heavy deposition of eggs in the previous year, about 60,000 sq. miles became

infested, and severe outbreaks were expected after the first rains.

The red locust, *Nomadacris septemfasciata*, following severe outbreaks in Natal and north-eastern Cape Province in 1937, appeared in much lesser numbers in 1938, and these swarms were confined to southern Natal and north-eastern Cape Province.

In the United States, the year 1938 was probably the most noteworthy of recent years for severe injury by grasshoppers. Nearly all the States between the Mississippi river and the Pacific ocean, together with Wisconsin and upper Michigan, were visited with light to severe infestations of these destructive insects. The most severe and widespread injuries occurred to small grains in parts of North Dakota and South Dakota, and to forage crops and range grasses in other States. The extensive flights of the lesser migratory locust, *Melanoplus mexicanus*, from its original breeding grounds, especially into eastern Montana, were noteworthy among the erratic activities of this species. In the corn-growing regions with its greater diversity of crops, the additional species, *M. differentialis*, *M. bivittatus*, and *M. femur-rubrum*, were present and seriously injurious, while *Dissosteira longipennis* caused severe injury in portions of Colorado, New Mexico, and Texas. The provinces of Manitoba, Saskatchewan, and, to a lesser extent, Alberta, in Canada, suffered extensively from incursions of these insects.

In Australia, there were outbreaks in New South Wales, portions of Queensland, of Victoria, and of South Australia, of the "black-tipped" locust, *Chortoicetes terminifera*; and of the "yellow plague grasshoppers", *Austroicetes cruciata*, in South Australia and in portions of Western Australia. The black-tipped locust develops in migrating swarms and, in favourable seasons, may have three generations. The yellow-plague grasshopper has but one generation and the swarms do not move far from the breeding grounds.

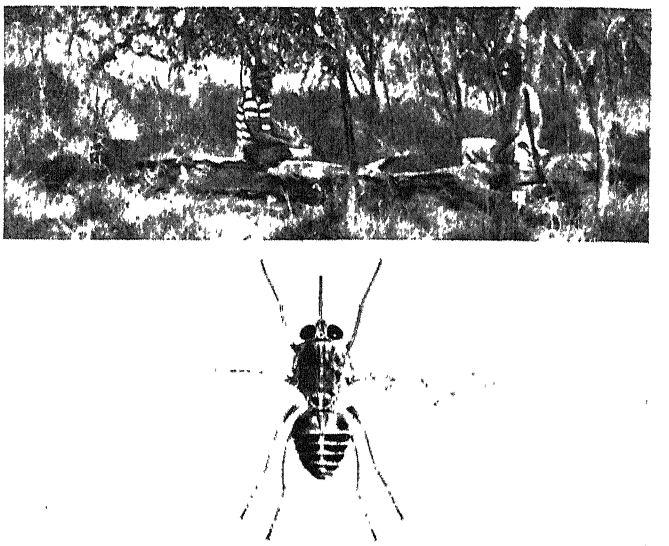
Noteworthy Insect Pests of the Year. The Colorado potato beetle, *Leptinotarsa decemlineata*, probably originated on the high plateau of southern Mexico. In 1859 it was found feeding on potato plants in Nebraska. By 1864 it had crossed the Mississippi river and ten years later it had reached the Atlantic seaboard. In 1887 the beetle was discovered at Mulheim, Germany. This invasion of the beetle was exterminated, but it appeared again in Germany, at Hanover, in 1914. In 1922 the insect was discovered in France, near Bordeaux. Since that time the beetle has spread over a large area in that country and threatens to overrun Germany. In the year 1938 it constituted one of the major entomological problems in France. Strenuous measures are being taken to check the spread of the insect and to control its ravages where it has become established.

The advent and spread of the beetle in the United States caused much fear and apprehension. To-day one rarely hears a grower complain of its injuries. Probably the French people will eventually find a similarly favourable outcome of the invasion.

Another serious problem at the present time in France is the sudden increase and severe injury caused by the Mediterranean fruitfly, *Ceratitis capitata*, the fly so greatly feared by the citrus growers of the United States.

Recent observations also disclose the very destructive activities of the fly in the Jordan valley in Palestine, where it attacks oranges, grapefruit, figs, and grapes.

In Australia, the sheep blowflies, *Lucilia cuprina*, *Calliphora augur*, *et al.*, constitute the chief entomological problem in that great country, with its dominant and extensive sheep industry. It is estimated that the flies cause an annual loss to Australian sheep growers of £4,000,000. Briefly, the flies lay their eggs on the wool of the sheep, where the maggots mat and destroy the wool and also burrow into the flesh of the animal, causing the disease known as "strike". The flies increase rapidly, and under favourable conditions are present in great numbers, often causing the deaths of many sheep. Extensive investigations of the lives, habits, and food preferences of the flies are being carried on, with the hope of finding some method whereby their ravages may be prevented. The blowfly problem is also a serious one in England, but there the species *Lucilia sericata* is the chief fly concerned.



Imperial Institute of Entomology]

TSETSE-FLY, *GLOSSINA MORISTANS* AND (ABOVE) A TYPICAL BREEDING-GROUND UNDER A LONG-FALLEN TRUNK OF *BURKEA AFRICANA*

The Tsetse-fly Problem. Tsetse flies, *Glossina palpalis*, *Glossina morsitans*, *et al.*, are inhabitants of tropical and subtropical Africa, and are the vectors of the causative organisms (*trypanosomes*) of the two types of sleeping sickness of man, and of the disease of cattle known as Nagana. The tsetse-fly situation is recognized as one of the chief biological problems of the British Empire. Moreover, the problem has assumed a new and unexpected significance in view of the suggested colonization of Tanganyika with Jewish refugees, for two-thirds of the total area of that colony is infested with the flies.

The British Colonial Advisory Committee, however, according to *The Times*, had already recognized the seriousness of the problem and had, earlier in the year, recommended a grant of some £200,000 to be used by the Tsetse Research Department in Tanganyika, in an extended investigation of the flies. The problem is exceedingly complex and far-reaching, because of the intimate association of the biology and habits of the flies with the wild animals, the various types of vegetation, the streams, and the forest areas of the region.

Practical Significance of Flight of Insects. The autumn of 1938 witnessed again a heavy northern flight of the cotton-leaf moth, *Alabama argillacea*. Immaculate moths, without the ruffling of a wing or scale, flew hundreds of miles from the Southern cotton fields of the United States, many of them going on beyond the Canadian border.

The pink cotton bollworm in 1938 extended its northern range in Texas (U.S.A.) to an alarming extent. The tiny moths of this insect have been found drifting on the wind at altitudes of hundreds of feet.

The European (Dutch) elm disease in the United States has "markedly" extended its affected area during the past season, because of the wider migrations of its principal vector, *Scolytus multistriatus*. The evidence is fairly clear that this small barkbeetle drifts with the wind. Heavier and larger barkbeetles have been taken on the roof of a high building, in the middle of a large city, at an altitude of at least 125 ft. above the pavement.

The wind-drifting of insects is significant from its practical bearing on measures of quarantine, instituted from time to time by various States and countries. It indicates the almost insuperable difficulty of preventing an insect from extending its territory and gradually infesting larger areas. Probably some modifications of previous regulations governing insect quarantines would ease the interchange of products, and accomplish as much as have the more rigid measures instituted in some cases in the past.

The Mosquito. The last report of the Public Health Commission of India contains the amazing statement that malaria caused the death of 1,632,000 persons in India during the comparatively short period covered by the report. The full significance of these death statistics is not fully realized until it is understood that for every death from malaria there are probably a dozen individuals suffering the pains and despondency of chills and fevers, which unfit them for the normal activities of life, and predispose them to the attacks of more virulent diseases.

At a meeting in October of the National Malaria Committee of the United States, the members were told that in seven of the Southern States there are at least 1,600,000 persons infected with malaria. This is probably too low an estimate, for a large proportion of the cases is not reported to the health authorities.

It is no wonder that malaria is considered a "stupendous" problem, for which the mosquito is responsible and against which a war of extermination should be waged with all of the vigour and knowledge the world possesses.

After the Army surgeon, Walter Reed, and his associates completed their epochal experiments in Cuba in 1900 and had demonstrated that the tiny mosquito, *Aëdes* (*Stegomyia*) *ægypti*, was definitely responsible for yellow fever infection in human beings, the disease was apparently exterminated in subsequent years from the Western Hemisphere. Then, suddenly, after freedom for 20 years, it broke out in epidemic form in the city of Rio de Janeiro, Brazil. Immediate investigation established the disconcerting fact that the fever existed in small villages in rural districts far from contact with centres of population. Those individuals who worked along the borders of forests were the chief ones attacked. Here, then, was yellow fever in the jungle where no Stegomyia existed. Intensive research gave evidence that other species of mosquitoes inhabiting the jungles must carry the infective virus of the fever. Now, in 1938, two species of mosquitoes, *Aëdes leucocelænus* and *Hæmagogus capricorni*, have been incriminated "as natural vectors of yellow fever". Other species are under grave suspicion of being involved. This discovery brings into startling relief the great danger to the United States from the introduction of the disease from the infected regions of South America, through the rapid and frequent international trips of passenger 'planes. Moreover, through the medium of the aeroplane, Europe and India, which heretofore have been unconcerned, are now in grave danger from the introduction of the disease from the endemic fever regions of Africa; for, as Dr. V. G. Heiser says, "A mosquito loves to ride in an aeroplane as much as a dog does in an automobile. Open the door a crack to either, and he or she will hop in". (*See* also EPIDEMIOLOGY.)

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EPIDEMIOLOGY. The outbreak and continuance of hostilities in some parts of the world, and social disturbances in others, have aroused fear of the spread of epidemic disease. As far back as Dec. 1936, the League of Nations, at the request of the Spanish government, sent a health mission to Republican Spain to study this problem and advise the government. The commission was impressed with the danger of the spread of typhus fever. Happily, no epidemic of this disease appears to have occurred in Spain, but the state of affairs in Morocco, so closely associated with the Iberian Peninsula, justified their alarm. Typhus, which is endemic in the remoter districts of the Atlas, has ravaged the province of Marakesh in grave epidemic form since Oct. 1937. Official records appear to be incomplete, but there is reason to believe that deaths alone may have reached over 4,000 and the number of cases about 30,000. Protection of individuals with a live virus-vaccine is said to have been efficacious in some areas. As to enteric fever, another disease fostered by war and disorder, statements issued by the Barcelona Government Sanitary Administration indicate that there has been little increase of the disease in the area occupied by the Republican army.

Epidemics in China. The position in the East was less reassuring. In parts of China outbreaks of cholera, malaria, and smallpox have followed warfare and the mass movements of refugees. Precise data as to cholera and malaria are lacking, but newspaper reports have indicated that large numbers of Japanese troops operating on the Yangtse, as well as labourers working in camps around Nanchang, have been disabled by one or other of these diseases. More recent official reports from Japan record the occurrence in Fakuyama, a Japanese city, of cases of cholera possibly having their origin in Shanghai. The flow of refugees to Hong Kong at the end of 1937 caused a definite increase of smallpox, of which the average winter incidence is about 200 cases. In the first quarter of 1938 the reported cases numbered about 2,000 and the deaths over 1,500, the apparently high fatality suggesting that the knowledge of cases was imperfect. In the last quarter of the year an epidemic of smallpox broke out in Shanghai, said to be the worst since 1874, involving about 1,100 cases up to Dec. 24. In the autumn of 1938 plague broke out in Northern China in a region between Hainking and Taonan. Within less than four weeks in October 250 deaths, and by Nov. 11, 534 deaths, had been reported. The recorded fatality rate of 99 per cent indicates that this is a recurrence of the pneumonic form of plague which arose among tarbagan hunters in 1910 and again became epidemic in 1923 and 1928. It should probably not be attributed to war conditions.

EPIDEMIOLOGY

ENGLAND AND WALES:

Number of Notifications of Certain Infectious Diseases in 1938 * compared with 1937

	Cerebro-Spinal Fever	Diphtheria	Dysentery	Encephalitis Lethargica (Acute)	Enteric Fever (including Paratyphoid)	Pneumonia (Acute Primary and Influenzal)	Poliomyelitis (Acute)	Polioencephalitis (Acute)	Scarlatina	Smallpox
1938	1,303	65,720	4,194	198	1,347	45,115	1,485	95	99,413	17
1937	1,140	61,339	4,167	217	2,151	55,893	708	96	95,737	4

* Provisional figures, compiled from the Registrar-General's Weekly Returns for 52 weeks, commencing Jan. 2 (corrected for each week).

Central Europe. More recently it has been suggested that poverty and overcrowding among the refugee Jews of Central and Eastern Europe may engender epidemic disease not only among them but also among their neighbours and the people of countries to which they may be evacuated. No such occurrence has so far been recorded.

Infection carried by Aircraft. In compliance with the International Sanitary Convention of 1933, the Minister of Health of England and Wales has made Regulations [1] for preventing the transmission of infectious disease by aircraft. They provide for the establishment of "sanitary aerodromes" at customs aerodromes used by foreign-going aircraft and aim especially at the control of the five "convention" diseases, *viz.* plague, cholera, yellow fever, typhus, and smallpox. The procedure laid down in the Port Sanitary Regulations, 1933, is followed, with modifications dependent on the greater rapidity of air transport. The Ministry of the Interior of the government of the Reich has also established fifteen sanitary aerodromes staffed and equipped to take similar precautions. The increased danger of the spread of yellow fever by aircraft in tropical zones has been the subject of consideration by the Permanent Committee of the Office International d'Hygiène Publique, special attention being given to the propriety of passengers being required to carry declarations of origin furnished by air travel agencies, to the elimination of mosquito harbourage in aircraft, to methods of destroying mosquitoes in aircraft and to the sending of sanitary messages by wireless from one aerodrome to another. The Convention of 1933 does not particularize on these matters.

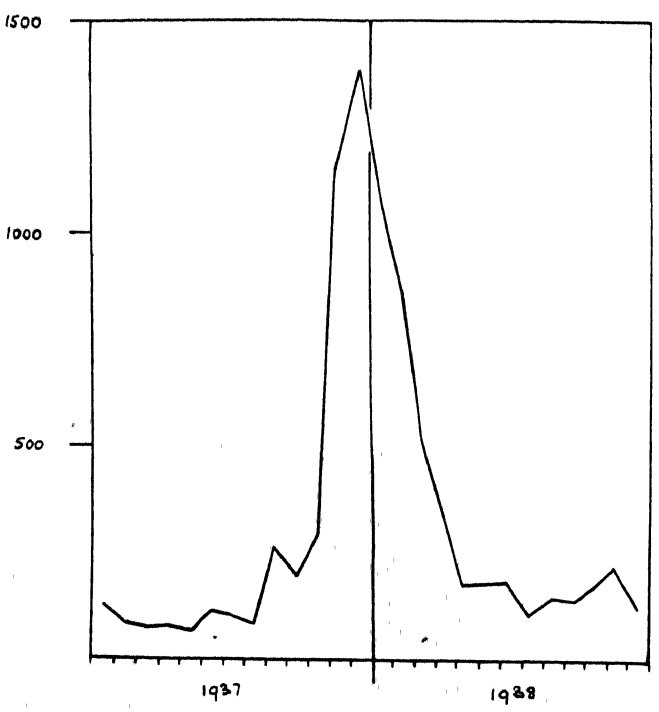


CHART OF DYSENTERY INCIDENCE FOR 1937 AND 1938

Infectious Diseases in England and Wales. The incidence of certain notifiable diseases is shown in the accompanying table, the figures for 1937 being given for comparison. Further reference may be made to those diseases which reveal significant tendencies.

Diphtheria. The increase here lends emphasis to the comments made in *Ency. Brit. Book of the Year*, 1938, on the failure of Great Britain to follow the lead of the United States and Canada, where active immunization has succeeded in reducing the volume of the disease in many areas to insignificant proportions.

Dysentery. The true behaviour of this disease is masked by the tabulated annual figures, and is therefore exhibited in graphic form. The chart reveals that an epidemic of an unusual character occurred at the end of 1937 and the beginning of 1938. That the increase of recorded cases in the autumn and winter of 1937 was not merely due to greater use of diagnostic methods, including bacteriological examinations, is obvious from the absence of any comparable rise at the end of 1938. The micro-organism associated with most of the cases submitted to laboratory tests was *Bacterium dysenteriæ* (Sonne). No satisfactory explanation of this most unusual occurrence has so far been given.

Enteric Fever. The reduction is mainly due to the absence of any large epidemics such as that which affected Croydon in 1937.

Pneumonia. The lower incidence reflects the absence of a major epidemic of influenza.

Poliomyelitis. This disease was twice as prevalent as in 1937, when the incidence was higher than it had been for ten years. The wave began in the third week of July and rapidly reached a maximum in the second week of August. After a slight recession a second peak was reached in the third week of October, followed by a steady and fairly quick decline. The disease was widespread throughout the country, but it assumed minor epidemic form in parts of the counties of Essex and Glamorgan.

Influence of Diet on Epidemics. In view of the paucity of precise knowledge as to the effect of food deprivation on susceptibility to infection, reference may be made to important work done in the London School of Hygiene.[2] The addition of dried milk to the diet of mice caused a significantly lower mortality from mouse-typhoid as compared with that affecting a group of mice identically fed in other respects and kept under identical conditions.

(*See* also ACUTE INFECTIOUS DISEASES.)

BIBLIOGRAPHY. (1) The Public Health (Aircraft) Regulations, 1938, S.R. & O., 1938, No. 299, H.M.S.O. (2) Watson, M., Wilson, J., and Topley, W. W. C., *The Journal of Hygiene*, 1938, xxxviii, 424. (R. M. F. P.)

United States. The control of pneumonia appears to be a probability as a result of active immunization. Felton produced active immunity in mice and humans with an antigen prepared from the polysaccharide of the pneumococcus. This antigen produced serum antibodies in both mice and humans. Its practical application has been demonstrated in field tests on Civilian Conservation Corps men in camps in New England and on the west coast.

Immunization against Diphtheria. The general opinion seems to be that, dose for dose, alum-precipitated toxoid is superior to plain toxoid. The Saginaw county, Mich., experiment showed that two doses of precipitated toxoid, given one month apart, give a higher amount of antitoxin content in the blood than do three doses of plain toxoid used one month apart There has also been some work on the combined use of antitoxin and toxoid in susceptible contacts to cases and carriers of diphtheria. Dr. Alberto P. Leon, chief of the division of epidemiology, Department of Public Health, Mexico, obtained considerable success with the simultaneous immunization, both active and passive, with Sordelli's toxoid and antitoxin, as used in susceptible contacts to cases and carriers of diphtheria.

The Chicago syphilis control programme, an attempt to control syphilis in a large urban population, with the combined efforts of Federal, State, and local agencies, has met with considerable success On May 24, Congress approved an act for further appropriations of the United States to continue the fight on venereal diseases.

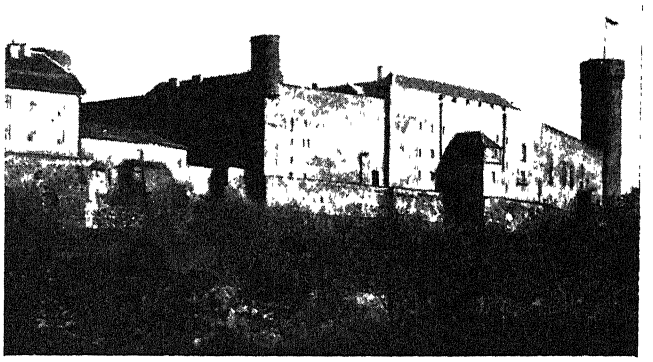
(*See also* PUBLIC HEALTH SERVICES.) (H. BU.)

ERITREA: *see* ITALIAN EAST AFRICA.

ESPIONAGE. With Governments publishing, collecting, and exchanging information of every kind through known agencies, the actual number of spies in the melodramatic sense of the word is stated to be small—say 3,000. In Great Britain, three such spies were sentenced on March 14 to six, four, and three years' imprisonment respectively. In the United States eighteen spies, said to have been employed by Germany, were indicted in June, of whom all save four escaped the jurisdiction of the courts. In view of Japanese espionage at Panama and along the Pacific Coast, facilities for photographing strategic points are restricted. France saw (June) the reintroduction of the death penalty for espionage in peace-time, the previous maximum sentence having been twenty years' imprisonment. The preamble to the decree pointed out that Germany, Italy, Poland, Czechoslovakia, and Rumania all now punished spying by death. The first sentence under the new law has already been passed.

ESTONIA. In view of Central European affairs, the state of emergency (virtually martial law) was extended (September) for another year. With Latvia, Estonia used persuasion (March) upon Lithuania (*q.v.*) to reconcile her enmity with Poland. In October a new measure defined Estonia's neutrality. At home, on New Year's night, festivities marked the restoration of parliamentary government, suspended since 1934. The new Constitution provides for a President (elected for six years) and two Chambers, the lower of eighty members, elected directly on "the English system" by adults over 22; the upper, of forty, indirectly elected. M. Konstantin Päts, pre-eminently identified with Estonia's independence, was formally confirmed in the Presidentship at the May elections. A new cabinet was formed, under M. Karl Eenpalu. (H. Fw.)

Area and Population:
Area 18,371 sq. miles.



Estonian Travel Bureau]
THE OLD CASTLE AT TALLINN, CAPITAL OF ESTONIA

Population (Jan. 1, 1938) 1,131,125.
Chief Towns: Tallinn (cap.) (146,400), Tartu (60,100), Narva (24,200), Pärnu (21,500).

President. Konstantin Päts.

Language. Estonian.

Religion. Christian (Lutheran, 78 per cent; Greek Orthodox, 19 per cent).

Production 1937:

Milk	838,600	metric tons
Butter (export)	13,180	,, ,,
Potatoes	985,600	,, ,,
Wheat	75,800	,, ,,
Rye	211,500	,, ,,
Flax	10,300	,, ,,
Wood pulp	86,000	,, ,,
Paper and paper boards	20,000	,, ,,

Industry and Labour 1937:
Index of Industrial Production (1929=100), 138·7
Index of Employment (1929 = 100), 138·8
Unemployment: applicants for work, 1,158

Overseas Trade 1937:
Imports, merchandise 111,100,000 kroons
Exports, ,, 106,000,000 ,,
Jan.–Oct 1937 Imports Ekr. 92,830,000; Exports Ekr. 85,751,000.
Jan.–Oct. 1938 Imports Ekr. 90,736,000; Exports Ekr. 85,554,000.

Communications and Transport 1938:
Roads fit for motor traffic 12,343 miles
Railways, open to traffic. 889 ,,
Shipping, registered (June 30, 1938). 177,100 tons gross
Motor vehicles licensed (Dec. 31, 1937) 7,385

Finance and Banking:
Revenue (est. 1938–39) 99,293,000 kroons
Expenditure (,, ,,) 99,293,000 ,,
Public Debt (March 31, 1938) 123,500,000 ,,
Notes in Circulation (Oct. 10, 1938) 54,200,000 ,,
Gold Reserve (,, ,,) 34,300,000 ,,
Exchange Rate (1938) 18·11–18·35 kroons (Ekr.) = £1 stg.

Education 1936–37:
Schools: elementary, 1,224; secondary, 120; universities, 2.

ETCHING. A survey of etching during 1938 reveals a continued and healthy development along both geographical and artistic lines, with principal activity centred in England and the United States. In France less important work is being done than during the early years of the century, book illustration, particularly in the medium of line-engraving, seeming to claim the attention of a considerable proportion of living engravers, yet Adam, Berg, Boullaire, Cami, Frélaut, Goërg, Gromaire, Laurencin, Léopold-Lévy,

Maillol, Orovida, Rouvière, Segonzac, and Villon are carrying on the great French tradition of graphic art. The newly organized National Committee of Engraving, with P. A. Lemoisne, chief of the Bureau of Prints of the Bibliothèque Nationale, at its head, is functioning in the interests of prints, both nationally and internationally.

In Italy the 21st Biennial Exposition at Venice attracted graphic art from eighteen countries, while an interesting exhibition of prints in the metal-plate media, assembled by the Society of American Etchers, was shown at the Italian Centre for American Studies in Rome. Conspicuous among Italian etchers, all of them working in the traditional style, have been Barriviera, Bellotti, Boglione, Mainini, Mauroner, Petrucci, Pietra, and Zarini. Little has come from war-torn Spain during the past year, the work of the surrealist Salvador Dali being hardly typical of that country's art.

The traditional spirit of German etching has been carried on by the work of Jensen, Jettmar, Luiko, Mayer, Schultheiss, Sintenis, Winkler, and Hans Theo Richter, the last named of whom won the Logan Art Institute Prize at the fifth International Exhibition of Etching and Engraving at the Art Institute of Chicago, U.S.A.

Polish print makers of today have devoted themselves largely to the block-print, but Stankiewicz and Widymska have both produced etchings in 1938. In Hungary, however, the art flourishes and interesting work is being done by Poharnok, Szönyi, Weil, and Zàdor, while Nandor Varga, of Budapest, has dry-pointed some striking and forceful portraits, and Julius Komjáti continues to etch his lovely plates of both portrait and landscape subjects. The best known of the considerable group of Czechoslovak etchers is J. C. Vondrous, who received his schooling in the United States and was for many years a resident there; while in Bulgaria Nenov and Staikov have both worked in dry-point. A comprehensive exhibition of contemporary American prints, sent to Europe by the Society of American Etchers, is now in Budapest.

In the Scandinavian countries, Swedish etchers continue to predominate, with work by such well-known practitioners as Asberg, Johanson, Lindborg, Sparre, and Veslen; while Finland has been well represented by Tandefelt and Segerstråle. During the summer 425 prints by members of the Northern Graphic Union were shown at the Victoria and Albert Museum, London, offering an opportunity for visitors to become familiar with etching as practised to-day in Sweden, Denmark, Finland, and Norway. In return, an exhibition of British prints will be shown in these countries during the winter of 1939–40. Meanwhile the exhibition of Swedish prints which was sent to the United States in return for a similar exhibition sent to Sweden in 1937, and which opened in New York in the autumn of that year in conjunction with the 22nd Annual Exhibition of the Society of American Etchers, is still travelling through the United States under the auspices of that Society.

British etching has been less affected by the so-called "modern" influence than has that of any other country, probably because of the firm roots of conservative art there and the existence of so many schools where etching, in the traditional spirit, is taught. A large section of the annual exhibition of the Royal Academy is devoted to prints and drawings, and the Royal Society of Painter-Etchers and Engravers, the principal print organization of England, holds a comprehensive exhibition of the work of its members every year in London. Sir Frank Short, R.A., has just retired from a long tenure of office as president, having succeeded Sir Francis Seymour Haden, who founded the Society, in this position, and Mr. Malcolm Osborne, R.A., has been elected to fill his place. The last named won the Frank G. Logan Prize at the 28th Annual Exhibition of the Chicago Society of Etchers with his dry-point portrait of C. J. Vint. Among the etchers who have published work during the past year are Bell, Bone (a magnificent dry-point entitled "Railway Sheds, Marseilles"), Briscoe, Buckton, Cain, Copley, Cowern, Currey, Davis, Dent, Dicksee, Drury, Fairclough, Fairley, Fisher, Flint, Freeth, Gross, Hardie, Holloway, Hudson, Jebb, Josset, Lack, Nicolson, Osborne, Patrick, Pearsall, Short, Smith, Stanley, Ian Strang, Taylor, Ward, Warlow, Williamson, Wilson, and Witherop. British etching has sustained a great loss within the year in the death of Frederick L. M. Griggs, R.A., one of the most distinguished practitioners of the art of recent times.

Barry and Taylor continue to be conspicuous in Canadian etching, and the Society of Canadian Painter-Etchers and Engravers is doing constructive work.

In spite of the great number of print makers working on stone and wood, the contemporary school of American etching continues to flourish and to increase in the number of artists included in it, and it may safely be said that, with Great Britain, it shares a greater activity than is taking place in any other country to-day. The three leading print societies—the Society of American Etchers, the Chicago Society of Etchers, and the Print Makers' Society of California—together with numerous other similar organizations all over the country, hold annual and travelling exhibitions; most of the important general exhibitions of contemporary art have print sections; print galleries are to be found in nearly all the larger cities; museums and libraries feature print activities, and the fact that laymen are becoming increasingly interested in prints is evinced by the constant formation of societies devoted to their study and of collections, both public and private. During the summer of 1939 there will be held, at the New York World's Fair, an exhibition of contemporary American prints, the most widely selected and representative of all phases of graphic art in the United States that has ever been assembled. During the past year twenty-one American print makers participated in the Biennial Exposition at Venice. Under Government administration an extensive programme has been carried out in the field of prints, the work so produced being assigned to various public institutions, such as museums, libraries, and schools.

Although the famous etcher of wildfowl, Frank W. Benson, is no longer active, Bacon, Isabel Bishop, Richard Bishop, Cadmus, Chamberlain, Costigan, Eby, Handforth, Heintzelman, Higgins, Hoffman, Landeck, Martin Lewis, Loggie, Marsh, Kenneth and Helen Miller, Osk, Reynard, Rosenberg, Rothe, Schaldach, Sloan, Sterner, Washburn, Woiceske, Woodbury, George Wright, Stephens Wright, and Mahonri Young, and the American Herman Webster living in Paris, have all done significant work during the year 1938. In addition, John W. Winkler has published some new and beautiful plates. The internationally known Donald Shaw MacLaughlan has died. (J. T. AR.)

EUROPE. The year 1938 was the most dramatic and most momentous in European history since 1918. It saw the first substantial breaches in the territorial settlement of Europe made in 1918; and there were a few days at the end of September when the outbreak of another European war seemed almost inevitable. The chief events of the year group themselves round a principal storm-centre in Central

Europe, formed by Germany, and a subsidiary storm-centre on the Mediterranean, formed by Italy.

Germany had freed herself, before the end of 1937, from all the restrictions and servitudes imposed on her by the Versailles Treaty But the Versailles frontiers remained intact. The first attack on these was made at their weakest point. The veto placed by the Treaty on the union of Austria with Germany contravened the principle of self-determination Prior to the Nazi revolution, opinion in Austria was almost unanimous in favour of such a union; and even later, a majority of Austrians would probably still have supported it. The government of Dr Schuschnigg was generally unpopular It was largely dependent on Italian support; and the growing weakness of Italy *vis-à-vis* Germany determined its fate. On Feb 12 Dr Schuschnigg for the first time visited Herr Hitler at Berchtesgaden, and as the result of the conversation, appointed two Austrian Nazis to his cabinet What happened during the next few weeks is obscure But on March 10 Dr. Schuschnigg suddenly announced a plebiscite to be taken on the following Sunday (March 13) on the future regime of Austria. This was treated by the German government as an act of defiance. On the evening of March 11 an ultimatum was sent, demanding the resignation of Dr. Schuschnigg, and German troops crossed the frontier. No resistance was offered; and within a few hours the virtual incorporation of Austria in Germany was effected. This was subsequently confirmed in a plebiscite held on April 10. Prominent supporters of Dr Schuschnigg and many Jews were arrested or maltreated. Later in the year, there were anti-Catholic riots in Vienna

The union of Austria with Germany meant that the whole western part of Czechoslovakia was surrounded on three sides by German territory; and it became clear how precarious was the position of a state which contained three and a quarter million Germans (or one-quarter of its whole population), and was bound by treaties of alliance to France and Soviet Russia. The Czechoslovak government tried to avert the coming storm by offering a new "charter of rights" to its minorities. Herr Henlein, the leader of the National Socialist Party of the German minority, rejected the offer as inadequate and put forward demands for complete autonomy, which were in turn rejected by the government. On May 20 a frontier incident caused fresh tension. German mobilization on the frontier was alleged in Czechoslovak but denied in German quarters; and it was widely believed that a German invasion of Czechoslovakia was only averted by British representations at Berlin Negotiations between the Czechoslovak government and the Sudetens (the name commonly given to the Germans of Czechoslovakia) continued throughout the summer At the end of July, Lord Runciman went to Prague with the approval of the British government to advise the Czechoslovak government on the problem.

During August the tension grew steadily greater. A partial mobilization of the German army took place under the guise of manœuvres; and in the middle of September the danger of direct intervention by Germany appeared so great that Mr. Chamberlain took the initiative of proposing a personal visit to Herr Hitler. At this meeting, which took place at Berchtesgaden on Sept. 15, Herr Hitler formulated the demand for self-determination, involving the incorporation of the Sudeten districts in Germany. Immediately afterwards, the British government received the report of Lord Runciman, who considered that no solution was possible on the basis of the retention of the



Wide World

MR. NEVILLE CHAMBERLAIN, M DALADIER, HERR HITLER AND SIGNOR MUSSOLINI AT MUNICH, SEPT 29, 1938

Sudetens in Czechoslovakia. Neither the French nor the British government was willing to risk war in order to withstand Herr Hitler's demand, and the Czechoslovak government under pressure accepted these terms. On Sept 22, Mr. Chamberlain met Herr Hitler at Bad Godesberg to discuss details. On this occasion Herr Hitler peremptorily demanded the evacuation of indisputably German areas by Oct 1, and the holding of plebiscites in further areas. The Czechoslovak government rejected these terms and completed its mobilization; and opinion in most countries regarded war as inevitable. Following a suggestion from Mr Chamberlain to Signor Mussolini, however, Herr Hitler invited the heads of the British, French, and Italian governments to meet him at Munich. The meeting took place at Munich on Sept. 30 and reached an agreement, which was accepted by Czechoslovakia. The Godesberg time-limit was slightly extended, and the task of defining the frontier between Germany and Czechoslovakia was left to an international commission meeting in Berlin.

As a sequel to these events, Czechoslovakia was compelled to set up autonomous regimes in Slovakia and Ruthenia, to cede to Poland the district of Teschen (claimed by Poland since 1919), and to restore to Hungary the predominantly Hungarian districts which Hungary had ceded to her under the treaty of Trianon. The result of all these losses was to reduce the population of Czechoslovakia from rather less than 15,000,000 to rather less than 10,000,000. President Beneš resigned; and Czechoslovakia's foreign policy was brought into line with that of Germany.

On the occasion of the Munich agreement, Mr. Chamberlain and Herr Hitler signed a declaration that future differences between their two countries should be settled by peaceful consultation. On Dec. 6 the German Foreign Minister, Herr von Ribbentrop, visited Paris, and a Franco-German declaration of a similar tenour was signed.

The economic and financial difficulties of Germany increased during the year; and neither the annexation of Austria and of the Sudeten territories, nor the prolonged and costly mobilization of the German army, was calculated to relieve them. In November, following the murder of a German diplomat in Paris, a renewed anti-Semitic campaign of great violence began in Germany, with the declared object of bringing about the removal of all Jews from Ger-

many. These measures excited horror and indignation in English-speaking countries. Criticisms made there were strongly resented in Germany, and in the latter part of the year Anglo-German relations again deteriorated. The problem of refugees was frequently discussed during the year, notably at an international conference held at Evian in July. But the scale of the problem appeared to defy any attempt to find a radical solution.

Italy remained throughout the year faithful to the "Rome-Berlin axis"; and during the Czechoslovak crisis Signor Mussolini declared publicly that war would find Italy on the German side. But the fate of Austria had been an unpleasant reminder of Germany's power and proximity, and Italy sought to strengthen her position by improving her relations with Great Britain. On April 16 an Anglo-Italian agreement was signed in Rome. Italy repeated her previous declaration undertaking to respect the *status quo* in the western Mediterranean, and added that she would seek no "privileged economic position" in Spanish territory. She also accepted the British plan for the proportional withdrawal of volunteers from both sides in Spain, and promised to withdraw all troops not previously withdrawn at the end of the civil war. In return, Great Britain undertook to recognize Italian sovereignty over Ethiopia But the whole agreement was to take effect only after "a settlement of the Spanish question". The most concrete advantage derived by Great Britain from the agreement was the cessation of Italian propaganda against Great Britain in Arab countries. Italy continued to supply military material to General Franco. But a withdrawal of 10,000 Italian troops from Spain in October was accepted by Great Britain as a sufficient contribution to a Spanish settlement to justify the coming into force of the agreement It was brought into force on Nov. 16.

The partial improvement in Anglo-Italian relations was not accompanied by any increased friendliness in Italy towards France. Friction was constant, and culminated in December in demands (voiced in the Italian Chamber, in the press, and in public demonstrations, though not officially endorsed by the Italian government) for the cession to Italy of Tunisia, Corsica, Nice, and Jibouti. Demands for Italian participation in the control of the Suez Canal and for a reduction of the canal dues was perhaps intended to be taken more seriously.

In November the Italian government published various anti-Semitic decrees; Jews who had settled in Italy since the War became liable to expulsion, and no Jew might own property in Italy in excess of a certain limit of value.

Great Britain. Mr. Eden resigned his post as Foreign Secretary in February owing to his opposition to the negotiations with Italy which led up to the Anglo-Italian Agreement. He was succeeded by Lord Halifax. After that time, and especially after the Munich settlement, the foreign policy of the government was frequently attacked by a small group of government supporters as well as by the opposition. Rearmament was the principal pre-occupation in British domestic politics. The rearmament programme of the government, and especially its organization of Air Raid Precautions, was widely criticized on the score of inadequacy. But there were few signs of any general swing of opinion in the country against the government.

France. The year 1938 was marked by a further reaction against the socialist policy of M. Blum and by the gradual dissolution of the Popular Front. In April M. Daladier became President of the Council, with M. Bonnet as Foreign Minister; and from this time relations between the government and the Left parties steadily deteriorated. The Munich Agreement, though approved by all other parties, intensified the opposition of the Communists; and the collapse of the Popular Front was completed by the financial and economic programme introduced in November by M. Reynaud, the Minister of Finance. This programme, which involved in fact, though not in theory, the abandonment of the forty-hour week, was attacked by all the Left parties as imposing an undue share of sacrifice on the worker. A general strike called for Nov. 30 was a failure; and strikes in individual industries were broken by government action.

Spain. The civil war continued with varying fortunes. In April General Franco reached the Mediterranean at a point between Barcelona and Valencia, splitting government territory in two; in December he launched the offensive that ended in the fall of Barcelona. Insurgent aircraft continually bombed government ports and foreign merchant ships lying in them. On July 5 the Non-Intervention Committee in London finally approved a revised version of the British plan of July 1937 for the proportional evacuation of foreign volunteers from both sides and the conditional grant of belligerent rights to the insurgents. In September the withdrawal of all volunteers fighting with the government forces was announced, and this had been completed by the end of the year. On the insurgent side, no substantial withdrawals were known to have taken place other than that of 10,000 Italians (*see* under Italy above).

Poland lost no time in turning Germany's successes to account. In March she seized the moment of the German occupation of Austria to demand the restoration of normal relations with Lithuania, which had been broken off since the seizure of Wilno by Poland in 1920; and Lithuania, faced with a threat of military force, complied. In the Czechoslovak crisis, Poland's ambitions were satisfied by the annexation of Teschen. But she also desired to see the cession to Hungary of the whole of Ruthenia, which would have given Poland and Hungary a common frontier. German opposition to this plan angered Poland; and Germany's evident inclination to encourage the Ukrainian movement in Ruthenia (now known as Carpatho-Ukraine) created apprehensions in both Poland and Soviet Russia, and accounted for a marked improvement in Polish-Soviet relations towards the end of the year. It was significant that strong demands for autonomy were heard at the same moment from the Ukrainian minority in Poland.

The Soviet Union played little part in European affairs during 1938. In March there was a further trial of twenty-one prominent Soviet citizens, including Bukharin, Rykov, Rakovsky, and the former head of the G.P.U., Yagoda, on the usual charges of treason and sabotage; and nineteen were executed. Extensive purges of officials and others were announced from time to time. During the Czechoslovak crisis, the Soviet government stated that it would fulfil its obligation under the Soviet-Czechoslovak Pact to come to the assistance of Czechoslovakia if France did the same.

In the small countries of **Central and South-Eastern Europe,** Germany continued her drive for political and economic supremacy, and acquired a preponderant share in the trade of all these countries, though in Greece and Turkey British influence remained powerful. Turkey received during the year substantial commercial credits from both Germany and Great Britain. (E. H. C.)

EXAMINATIONS. The fundamental questions to be asked in respect of each examination, and each part of an

examination—What, exactly, are we testing? Are we testing it satisfactorily?—often receive scant attention. The subject has been discussed in a symposium by 22 experts, in connexion with typical English examinations (*The Purposes of Examinations*, Evans Brothers, 1938).

An important series of inquiries into the working of examination systems in several countries have been made at the suggestion of the Carnegie Corporation and Foundation and the International Institute of Teachers College, Columbia University, New York, since the beginning of 1932; and the results have been, or are in course of being, published by the various "International Institute Examinations Enquiry Committees". Though financed by means of funds derived from the Carnegie Corporation, each of these committees was left entirely free to choose its own subjects and methods of inquiry. The Carnegie Foundation itself has issued two publications of wide general interest. Professor I. L. Kandel's *Examinations and their Substitutes in the United States* (1937) reveals a new attitude towards the whole system of examinations other than those intended to test professional skill, *e.g.* those for motor-drivers at one end of the scale, and for doctors or actuaries at the other. In professional examinations the duty of the examiner is to decide whether a candidate is fit, or unfit, to exercise his *métier* without risk to the public. But the tendency of educational thought in America is to regard the proper object of examinations at the primary, secondary, and early university stages in a different light; not as a means of separating the sheep from the goats, but as a means of "vocational guidance" in its widest sense. In England a battle is still being fought over the School Certificate Examinations with from sixty to seventy thousand candidates a year, which guard the entrance to the universities and the chief professions, and to many business careers. The present system has been criticized in many ways. It fails to take sufficient account of pupils whose gifts lie outside the ordinary, especially in art and technical skill. The requirement that a pupil should take again a subject in which he has passed because he has failed in other subjects is also unreasonable, if to "pass" means any permanent attainment. On the other hand, tests in some subjects are so organized that it is difficult to attach any meaning to the verdict in terms of utilizable skill. With its severities, and its leniencies, only some seventy per cent of the candidates pass the examination as a whole at any one time, while some 25 per cent of the number of possible candidates are discouraged from presenting themselves each year. The facts indicate a grave maladjustment between the system of examinations and that of secondary education.

The book by W. S. Learned and Ben D. Wood, *The Student and his Knowledge*, an account of an investigation organized by the Carnegie Foundation, shows clearly that though the examination system is far less rigid in the United States, there is also serious maladjustment, and many students have been encouraged to pursue studies for which they are unsuited.

We now come to certain questions relating to the technique of examinations of fundamental importance. There are two characteristics to be considered in connexion with the marks allotted at any examination tests: (1) their validity, *i.e.* the agreement of the measurements with the things they are supposed to measure; (2) their "consistency" (a term sometimes replaced by the ambiguous term "reliability"), which designates the degree of agreement between any two independent sets of measurements of the same thing (*see* a chapter by Professor C. Spearman, F.R.S., in *Essays on Examinations*, Macmillan, 1936). The two characteristics have to be considered in connexion both with the "new-type" examinations, in which the answer to each question is such that any examiner will award it the same mark, and the traditional essay-type, in marking which examiners frequently exhibit wide differences, and in which the same examiner marking twice at different times may exhibit a great variation in his own judgments.

As Spearman points out, a test may yield consistent results but have little validity, *i.e.* may be ill-designed for its purpose; but a test of which the consistency is low must have low validity. If the marks of a number of examiners, all regarded as qualified, are widely different, no meaning can be attached to the results.

The investigations of the English, French, Swedish, Finnish, and Norwegian Committees reveal the grave inconsistencies which may occur in marks awarded in examinations of the traditional type The English results, recorded in *An Examination of Examinations* and *The Marks of Examiners*, by Sir Philip Hartog, Dr. E. C. Rhodes, and Professor Cyril Burt (Macmillan, 1935 and 1936), show that at some of the most important of the primary, secondary, and university examinations independent judgments of the different examiners, and different boards of examiners, acting independently, may differ widely. Further, when fifteen School Certificate History scripts were re-examined by the same fourteen examiners after an interval of from twelve to nineteen months, they altered their awards of "classes" in 92 cases out of 210. Statistical and other precautions taken by examining bodies, no doubt, reduce the element of chance in some large-scale examinations, but it must remain considerable.

The new-type examinations are exempt from the more flagrant inconsistencies of the traditional type; but they are not exempt from criticisms, which can only be outlined here. It has been said that they do not test constructive power and imagination, which is true; that they merely test verbal memory, which is untrue. Many of the newer forms of tests, such as those of the American Co-operative Test Service, would be unintelligible to a person who had not thoroughly studied the subject. They have, moreover, the advantage of covering, in the same time, an immensely wider field of knowledge than the essay-type of examination. Experiments are required on both types of examination by means of new methods not involving the fate of candidates until they have proved satisfactory.

Efforts are being made to test the validity of examinations designed to test the suitability of children for higher education by the "follow-up" method, *i.e.* by comparing their success at these examinations with their later achievements either in class or at higher examinations. Reference should be made to *The Reliability of Examinations*, by Professor C. W. Valentine (University of London Press, 1932), to the extensive investigation on the subject by the Scottish Council of Educational Research, under the I.I.E.E. scheme, of which the first results were recorded in *The Prognostic Value of University Entrance Examinations* in Scotland (University of London Press, 1936), and which is still being continued, and to similar investigations carried out by the I.I.E.E. Committees in Finland and Sweden.

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EXCHANGE EQUALIZATION FUNDS AND GOLD MOVEMENTS. The year 1938 roughly fell into two parts. The first, which lasted until about April, witnessed a continuance of the previous year's movements, namely, an efflux of funds from France. This came to an end with the creation of the Daladier franc early in May, and the remaining eight months of the year witnessed chiefly the monetary reaction to the prevailing state of political tension which reached its climax in the September crisis.

Gold movements, so far as they are recorded by the returns of the world's chief central banks, reveal comparatively little. Thus the Bank of England's gold holdings underwent no change at all during the whole of the year, as the following table shows. There were substantial increases in the central bank holdings of the United States, Holland, Belgium, and Switzerland. The Bank of France's gold stocks were reduced by just over Frs. 3 milliards during the year, but in November the Bank's gold stocks were written up from the basis of 43 milligrams of gold, nine-tenths fine, per franc to one of 27½ milligrams. Thus, instead of showing at the end of November gold stocks of Frs. 55 milliards, the Bank showed a gold stock of Frs. 87 milliards.

Central Bank Gold Reserves

	Nov. 1937	Nov. 1938	Change
England (£ millions)	326·4	326·4	—
United States ($ millions) (monetary gold stock)	12,774	14,312	+ 1,538
France (Frs. millions)	58,032	{55,808 / 87,264}*	— 3,124
Germany (Rm. millions)	70·3	70·8	+ 0·5
Holland (Fl. millions)	1,382	1,506†	+ 124
Belgium (Bel. millions)	3,318	3,446	+ 128
Switzerland (Frs. millions)	2,663	2,880	+ 217

* Frs. 55,808 millions at 43 milligrams, nine-tenths fine, gold per franc. Frs. 87,264 millions at 27½ milligrams, nine-tenths fine, gold per franc. The reduction in the third column is based on the valuation at 43 milligrams.

† Includes a small amount of silver.

The full extent of the year's gold movements cannot be told, for the simple reason that many countries now operate exchange funds the size and the composition of which are revealed either not at all or only at infrequent intervals. Some indication of the British position is afforded by the half-yearly statement of the position of the British exchange equalization account. This is given in the following table, which shows how the British gold stocks rose up to March 31, 1938, but fell heavily during the ensuing six months:

British Gold Holdings

(valued at 140s. per fine ounce) (£ millions)

	Sept. 30, 1937	March 31, 1938	Sept. 30, 1938
Bank of England	537·6	537·6	537·6
Exchange Equalization Account	279·3	297·8	151·8
Total	816·9	835·4	689·4

The real story of the year's monetary operations therefore rests upon the experience of the various exchange funds. During the spring the continued pressure on the franc led to a fresh drain of funds from France, so much so that in February the gold resources of the French exchange fund had to be reinforced. At the end of Nov. 1937, Frs. 3 milliards of gold had been transferred from the French exchange fund to the Bank of France. This gold had to be restored to the French exchange fund in February, and this explains the drop in the Bank of France's gold stocks on the old basis of valuation shown in the first table. The main pressure on the franc lasted until the middle of April, but was then abruptly brought to an end by M. Daladier's decision to depreciate the franc from about Frs. 160 to an upper limit of Frs. 179 to the pound sterling. The immediate consequence of this was a rush to re-convert into francs French funds which had taken refuge in London, New York, and other centres. Their French owners reaped a handsome exchange profit from this re-conversion, and the repatriation of this money enabled the French exchange fund to recover in May the equivalent of some £100 millions sterling of gold. Even during the September crisis not all this gold was lost again, while M. Reynaud's reforms of November, followed by M. Daladier's successful handling of the French labour troubles, led to a further repatriation. So far as can be told, the French exchange fund must have gained gold on balance during the year, but it is quite impossible to say how big its net gain was.

It is now time to look at the British experience, for this largely gives the key to both phases of the past year. Before describing the year as a whole, it is necessary to give a very brief description of the British exchange equalization account's technique. The function of the exchange account is to smooth out passing fluctuations in sterling, though not to undertake the impossible task of resisting a larger movement. To perform this function the account sells sterling to meet a passing demand such as is occasioned by an influx of funds into London; and sells foreign currency, for example francs and dollars, whenever there is a sudden outflow of funds from London. To do this, it obviously has to hold both gold and sterling. Theoretically it could keep its sterling on deposit at the Bank of England, but in practice if it did so, there would be a perennial stringency in the London market, for the British banking system would be deprived of all the cash in the possession of the exchange account. The exchange account therefore invests its sterling in Treasury bills. This means that when the account is replete with sterling, fewer bills are issued in the weekly tender to the London money market; whereas when the account is acquiring gold, it reduces its holding of Treasury bills so that more bills are issued by tender. Thus the size of the tender issue from time to time, in comparison with the total size of the floating debt, gives a rough idea of which way the exchange account is operating, and also of the extent of its operations. At times, however, the exchange account may not be able to reinvest its sterling as quickly as it acquires it. On these occasions money piles up temporarily in public deposits at the Bank of England, while the banking system experiences a transient shortage of cash. Relief, then, has to be given through a reduction in the weekly Treasury bill issue and also by official purchases of bills in the London market.

The following table shows the composition of the British floating debt at various dates. Tender bills are those issued to the banking system. Tap bills are those issued to public departments and others, including those bills issued to the exchange equalization account. Part of the exchange account's sterling assets may also be represented in the item, Ways and Means Advances from public departments.

	Floating Debt (£ millions)							
	Tender Treasury Bills	Tap Treasury Bills	Ways and Means Advances: Public Debts	Ways and Means Advances: Bank of England	Total	New York Exchange	London price of Gold	
1938						$	s	d.
Jan 15 .	612	309	35	—	956	4 99½	139	7½
April 9	512	305	31	5	853	4 96¼	140	1½
June 4	575	309	44	2	930	4·94¾	140	8
July 30	565	309	47	—	921	4 91½	141	6
Oct 8	521	379	49	4	953	4 78½	145	4½
Nov 28	522	404	45	—	971	4·64½	149	10½
Dec. 31 .	488	498	46	5	1,037	4.64½	149	7½

Up to March, the exchange account was on balance gaining gold from France and therefore reduced its holding of sterling, and the table shows a reduction of tap issues of Treasury bills during that period The fact that the tender issue also contracted was due to the usual spring reduction of the floating debt. In May came the first and biggest repatriation of funds to France This necessitated substantial sales of gold to the French exchange fund, so that the British exchange account could obtain the francs it needed to sell in the market with the object of preventing a rapid depreciation of the pound against the franc. On this occasion the exchange account was unable to re-invest at once all its new accretion of sterling, and public deposits at the Bank of England (*q.v.*) rose from £10 to £36 millions during the week ended May 11 and remained high during the whole of May. Payment of the June 1 War Loan dividend was largely financed out of the exchange account's sterling resources, the account receiving tap Treasury bills instead, so that this cash was by June restored to the banking system. The net result was an increase in the tap Treasury bill issue of about £30 millions between May 7 and June 3, this representing the re-investment of the exchange account's new sterling.

The September crisis witnessed large-scale movements of foreign funds from London, mainly to New York, but also to other centres such as Holland, Switzerland, and Scandinavian countries. This movement had again to be looked after by the exchange account. Its support to the pound took two main forms. First, it sold gold direct to the American authorities in exchange for dollars, and then used these dollars to meet the demand which arose in the London foreign exchange market in connexion with the outflow of funds to New York. Next and simultaneously it sold gold for sterling in the London bullion market. Much of this gold was bought by *arbitrageurs*, who shipped the gold to New York, and sold it to the American authorities, meanwhile selling in the London foreign exchange market the dollars which they received for their gold. Whether the exchange account shipped gold itself to New York or sold it in the London bullion market, the result was the same. The exchange account acquired sterling, while dollars came on offer in the London foreign exchange market to meet the demand created by the outflow of funds to New York This outflow, however, was a major movement which was too great for the exchange account to check altogether. The result was depreciation of the pound from 4·91 at the end of July to a momentary low point of 4·62 immediately prior to the Munich agreement.

These operations had the same effect on the money market as those necessitated by the May French repatriation movement, though on a much larger scale. Once more money accumulated in public deposits, the peak figure being £32 millions on Sept. 7. Moreover the exchange account had to take up fresh Treasury bills, and during August and September and early October the tap issue rose from £309 millions to £379 millions. In addition the exchange account had to buy bills in the money market, and these bills having been originally issued by tender cannot be detected in the table analysing the floating debt. It is noticeable, however, that between the end of July and early October the total tender issue fell from £565 millions to £521 millions. There was a further decline to £488 millions by December 31.

While the exact extent of the exchange account's operations remains a secret, the actual movements of gold into and out of the country are plain. These are shown in the following table covering the period from Aug 5 to Oct. 6.

Gold Bullion Exports from the United Kingdom
(£ thousands)

To	Aug. 5–Sept. 1	Sept 2–15	Sept. 16–Oct. 6	Total
United States	27,805	29,377	74,520	126,702
Sweden .	2,276	3,178	1,758	7,212
Holland .	829	1,716	613	3,158
Switzerland .	2,194	1,584	3,711	7,689
Canada .	—	30	3,267	3,297
Eire .	—	—	1,990	1,990
Other countries	537	471	324	932
Total .	28,641	35,956	86,183	150,780

Gold Bullion Imports into the United Kingdom
(£ thousands)

From	Aug 5–Sept. 1	Sept. 2–15	Sept. 16–Oct. 6	Total
Belgium .	6	11,863	20,793	32,662
France .	92	—	9·187	9·279
Germany	1,241	2,969	—	4,210
Holland .	13	19	1,976	2,008
Switzerland	43	104	967	1,114
South Africa	7,129	1,407	843	9·379
Russia .	1,161	—	—	1,161
Australia .	402	—	502	904
Other countries	1,177	261	279	1,717
Total	11,264	16,623	34,547	62,434

In brief, during those two months England exported £151 millions of gold, against imports of only £62 millions, of which £33 millions represented gold sent to London by the Belgian authorities for safe custody. The real British net export was therefore about £120 millions. Practically all this gold must have come from the exchange equalization account's reserves. On the other hand, at the height of the crisis there was a rush in London to dishoard gold, inspired by the fear that if war broke out gold might be acquired compulsorily by the authorities of the various countries concerned. Much of this gold was offered to the London bullion market and bought up by the British exchange equalization account. Thus its net loss during these two months must have been less than £120 millions. An almost complete picture of the effects both of the May French repatriation and of the September crisis is shown by the return of the exchange account's gold holdings dated Sept. 30. These reveal a loss during the preceding six months of 21 million ounces, which at 140*s.* an ounce equal £147 millions and at the Sept. 30 price of 144*s.* 1*d.*, equal £151 millions.

The year's last three months saw a fresh dram of funds from London. This was due partly to the dubious view taken of the international political outlook, partly to the October recovery in Wall Street which attracted funds from London for investment, and in November to the French repatriation movement to France already described. Again it is impossible to assess the full extent of the exchange account's gold losses, but it is noticeable that between Oct. 8 and Dec. 31 the tap issue of Treasury bills rose from £379 millions to £408 millions. There was also the now familiar temporary accumulation of funds in public deposits which in November rose once more to over £30 millions. Complete evidence that a fresh major movement was at work is found in the depreciation of sterling from $4·81 on Oct. 6 to a low point of $4·62 on Nov. 28. The following week witnessed a rally to $4·69 largely due to the fact that the exchange market had run itself short of sterling. This must have enabled the exchange account to recover a fraction of its recent losses, but the rally did not persist. Early in 1939 the exchange account's gold reserves were reinforced by a transfer of £350 millions of gold from the Bank of England.

Little is known of the operations of the exchange funds in other countries. The increase in the American monetary gold stocks is shown in the first table. It is to be noted that as part of Washington's new efforts at reinflation the American exchange stabilization fund has released to the general banking system the dollar assets which it held for a short time. Thus it can no longer pay for gold, which in turn prevents it from adding to its gold stocks. Most of the United States' 1938 gold acquisitions, therefore, went in the form of gold certificates to swell the reserves of the Federal Reserve System—that is they passed into the internal banking system.

The Dutch exchange fund had in the main to cope with a steady demand for guilders, as funds came into the country. Until the September depreciation of sterling, it made its main object the maintenance of a fixed exchange rate of florins to the pound; but in September it had to give this up as a bad job, and let the guilder appreciate against the pound and follow the dollar. The Belgian authorities have had to contend against various vicissitudes, including the Daladier depreciation of the French franc, which made the belga appear over-valued. On the whole they have coped with these successfully.

Considering the major political disturbances of 1938, the final conclusion must be that the world's monetary authorities, operating through their various exchange funds, have preserved a much greater degree of monetary stability than might have been expected. Exchange fluctuations, of course, have occurred, and there has been the Daladier depreciation of the franc. But the crisis drop in sterling, serious though it appears, was only six per cent. Without the present degree of internal monetary control and international co-operation, much greater fluctuations might easily have occurred. (N. E. C.)

EXCHANGE RATES. The year 1938 falls naturally into three parts. The first ends with M. Daladier's depreciation of the franc at the end of April, and its fixation at a lower limit of value equal to Frs. 179 in the pound. This had the important implication that the franc was regarded as being linked to sterling. The second period ends with the Munich Agreement, while the third period embraces the ensuing *malaise*, which persisted for the rest of the year.

The first period was one of a continual outflow of funds from France, combined with an over-valuation of the pound against the dollar. The pound was then quoted at well over $4·90, and it was probably only held there by the persistent demand for sterling created by the flight to London of French capital. The birth of the Daladier franc in May was followed by the first rush of funds back to France, and while this was short-lived, the long-term result was that sterling lost this particular prop. Thus during the summer sterling sagged. In August and September came the crisis flight of funds from London (and Europe) to New York, and while it was entirely *foreign* money which fled from London, the effect on the pound was the same. The British authorities lost large quantities of gold (*see* EXCHANGE EQUALIZATION FUNDS AND GOLD MOVEMENTS), and the pound fell on Sept. 28 to $4·66¼.

The period since Munich was one of general nervousness. Sterling initially recovered to $4·83, but a further efflux of funds from London took place in October. In November, the political successes of M. Daladier and M. Reynaud caused the second rush of funds back to France, which took place during the year. For these reasons sterling was again weak, falling to $4·66 at the end of November, and rallying slightly during the next few days. Francs conversely strengthened to under Frs. 178 to the pound.

While the exchanges were mainly at the mercy of capital movements inspired by political doubts and fears, there was in the background the persistence of Great Britain's adverse balance of payments. In 1937 this amounted to £52 millions, and it may well be as much in 1938. Still one consequence of the pound's depreciation during the year is that it has become much less over-valued than at the end of 1937: $4·67, in fact, is a much more natural value for the pound than $4·99, and to that extent the year's movements have helped to create equilibrium. Psychologically they have also had the beneficial result of destroying any illusions about the sanctity of the old parity of $4·866.

In the sterling area, the year's political history had some repercussions, for the Scandinavian countries shifted some of their money from London to New York. They also strengthened their gold and foreign exchange reserves. The main influence, however, was the world trade recession and fall in the prices of primary products. This affected the export trade of many countries, and so to some extent upset their exchanges. Thus in India, the Reserve Bank had to abandon in April the rate of 1*s*. 6⅛*d*. for the rupee, and allowed it to slide to 1*s*. 5 13/16*d*. It soon recovered to 1*s*. 5 15/16*d*., but the net decline, though small, is symptomatic of the deterioration of India's trade balance and of the depletion of the Reserve Bank's external balance. Australia and New Zealand lost part of their London funds for the same reason, and at the end of the year, New Zealand suspended the convertibility of her note issue into sterling, and imposed a form of exchange control applying to both exports and imports. The recession equally made itself felt outside the Empire. In November, Argentina raised the official import exchange rate from 16 to 17 pesos to the pound (plus commission), while during the year the "free" rate depreciated from 17·03 to 20·58½ pesos to the pound.

The Continental countries with free exchange strengthened their position against sterling. Holland experienced a steady demand for guilders, due to an influx of funds. Up to the crisis the Dutch authorities tried to peg the guilder at about Fl. 8·95 to the pound, but in September they had to abandon their policy, and the guilder then

	per £	LONDON RATES OF EXCHANGE SPOT RATES							
		Dec 31, 1937	March 31, 1938	May 31, 1938	July 29, 1938	Sept 28, 1938	Sept 30, 1938	Oct 8, 1938	Dec. 8, 1938
New York	$	4 99¾	4 96⅞	4·95 3/16	4·91⅝	4 66¼	4·83	4·78⅜	4 67½
Montreal	$	5·00 3/16	4 99 11/16	5·00 7/16	4·93⅛	4 76	4·86¾	4·82⅛	4 71⅛
Paris	Fr	147 9/32	161 11/16	178 7/32	178 5/32	179⅛	178 11/16	178 11/32	177 17/32
Brussels	Bel.	29·46½	29·38	29·29½	29·08	27 40	28 55	28 29½	27·76½
Milan	L	95 / 95·00 (a)	94⅜ / 94 12 (a)	94⅛ / 94·50 (a)	93 7/16 / 93·50 (a)	88 / 88·75 (a)	91½ / 91·70 (a)	90⅞ / 91 30 (a)	88⅞ / 89 20 (a)
Zürich	Fr.	21·61½	21·65½	21·72	21 45⅜	20 75	21·22½	20 99	20·64½
Athens	Dr.	542½	547½	547½	547½	547½	547½	547½	547½
Helsingfors	M	226⅛	226⅛	226⅜	226¼	226¾	226¾	226¾	226¾
Lisbon	Esc.	110 3/16	110 3/16	110¼	110 3/16	110 3/16	110	110⅛	110⅛
Amsterdam	Fl	8 98	8 96⅞	8·96⅞	8 95½	8·65	8·88½	8 79½	8·59¼
Berlin	Mk.	12·41	12·36½	12 33	12 23½	11·95	12·02½	11 95	11·64
(Reg. Marks,	discount)	46%	51%	51½%	54%	67½%	59%	56½%	54⅝%
Budapest	Pen.	25⅛	25⅛	25⅛	24⅞	24⅛	24½	24¼	23⅝
Prague	Kc.	142 7/16	142 3/16	142⅜	142⅜	137¼	140	139	136½
Warsaw	Zl	26⅜	26⅜	26¼	26¼	24¼	25½	25⅝	24¾
Riga	Lat	25¼	25¼	25¼	25¼	25¼	25¼	25¼	25¼
Bucharest	Lei	677½	677½	672½	670	660	665	665	660
Constantinople	Pst	619† / 625 (b)	620‡ / 625 (b)	620‡ / 623 (b)	616‡ / 620 (b)	585‡ / 601 (b)	598† / 600 (b)	595‡ / 605 (b)	575‡ / 590 (b)
Belgrade	Din.	215½	217	218	217	210	213	213	210
Sofia	Lev.	405	405	405	405	405	405	405	395
Oslo	Kr.	19·90	19·90	19 90	19·90	19·90	19 90	19·90	19·90
Stockholm	Kr.	19·40	19·40	19·40	19·40	19·40	19·40	19·41	19·41
Copenhagen	Kr.	22·40	22 40	22·40	22·40	22·40	22·40	22·40	22·40
Alexandria	Pst.	97½	97½	97½	97½	97½	97½	97½	97½
Brit India	Rup.*	18⅛	18⅛	17 13/16	17 15/16	17 15/16	17 15/16	17 15/16	17 15/16
Hong Kong	$ *	15	14 13/16	14⅞	15	15	15	15	15
Kobe	Yen.*	14	13 3/32	14	14	14	14	14	14
Shanghai	$ *	14 3/16	12½ (f)	10½ (f)	8⅞ (f)	8¾ (f)	8½ (f)	8¼ (f)	8¼
Singapore	$ *	28 5/32	27 15/16	27 13/16	28	27 15/16	27 15/16	27 15/16	27 15/16
Rio	Mil.*	2 17/32	2 13/16‡(g)	2 13/16‡(g)	2 31/32‡(g)	3‡ (g)	2 15/16‡(g)	2 15/16‡(g)	3 1/16‡(g)
B. Aires	$	17·03 (c) / 16·12 (d)	20·05 (c) / 16·12 (d)	19 00½(c) / 16·12 (d)	18·90 (c) / 16·12 (d)	18·80 (c) / 16·12 (d)	18·95 (c) / 16·12 (d)	18·95 (c) / 16·12 (d)	20·58½ / 17·13
Valparaiso	$	125 (e) (f)	125 (e) (f)	125 (e) (f)	123 (e) (f)	118 (e) (f)	118 (e) (f)	121 (e) (f)	116 (e) (f)
Montevideo	$ *	25½	20½	20	20	20½	20	20	18⅜
Lima	Sol.	20⅛ (f)	20⅛ (f)	21 (f)	21½ (f)	21 (f)	22½ (f)	23 (f)	22½ (f)
Mexico	Pes.	18	Unquoted	Unquoted	Unquoted	Unquoted	Unquoted	Unquoted	Unquoted
Manila	Pes.*	24 1/32	24 1/16	24 7/32	24	24¾	24¾	24¾	25¼
Moscow	Rbls.	26·48⅜	26·31 11/16	26·25	26·08 6/16	24·77½	25·57¼	25·35 1/16	24·77⅜

* Pence per unit of local currency. (*a*) Rate for payments to the Bank of England, for account controller of Anglo-Italian debts. (*b*) Under Anglo-Turkish Agreement. (*c*) Official rate is $15 sellers. (*d*) Average remittance rate for importers. (*e*) Latest export rate. (*f*) Nominal. (*g*) Official. ‡ Sellers.

appreciated against sterling in sympathy with the dollar. The Belgian exchange was subject to more vicissitudes, due both to political fluctuations inside Belgium and also to the suggestion that the Daladier depreciation of the franc had caused the belga once more to become over-valued. Nevertheless, the belga appreciated during the year against sterling, and on the whole held its ground in New York. The Swiss exchange moved broadly in sympathy with the dollar.

Published exchange rates give little indication of the year's trends in the "controlled" countries—Germany, Italy, Central and South-Eastern Europe. Much of these countries' trade is conducted through exchange payments and clearing agreements, and in Germany's case, prices, special exchange rates and subsidies for both imports and exports are all used simultaneously as complementary levers for guiding trade to her advantage. The general trend of the year, in fact, has been the development of a kind of "reichmark area", analogous in some ways (but not all) to the sterling area, though with the fundamental difference that the latter is mainly a "free exchange" area. Where contact exists with the outside world, there were certain signs of weakness. Thus the registered mark rate depreciated to a discount of 67½ per cent during the crisis, and in spite of its later recovery shows a net depreciation over the year. In many South American countries trade with Germany is still conducted on a compensation basis, involving the use of special "aski" marks. These are quoted at a discount below the rate for free marks, but while still substantial, the discount showed a tendency to narrow during 1938. In Brazil it shrunk from 29·7 to 16·2 per cent during the year to Oct. 1938, in Colombia from 18·3 to 16·0 per cent, and in Peru from 21·8 to 19·5 per cent. These movements suggest that these countries strengthened their position *vis-à-vis* Germany, but Germany could easily off-set such movements by adjustments in subsidies. On the other hand, Brazil temporarily suspended during 1938 aski mark sales of cotton and coffee to Germany.

Far Eastern exchanges remained under war influences. The Japanese exchange is rigorously controlled, while the Chinese dollar steadily depreciated. There was also a temporary drop in the Hong Kong rate. (N. E. C.)

EXPLORATION AND DISCOVERY. Geographical, archæological, and other scientific expeditions, besides small private parties and individuals were at work in many parts of the world in 1938. It is convenient to divide them into three geographical groups as follows, Asian and African, Polar, and North and South American exploration, and to treat the more important of them under these headings.

Asian and African Exploration. H. St. John Philby made a crossing of south-west Arabia from the Red Sea to

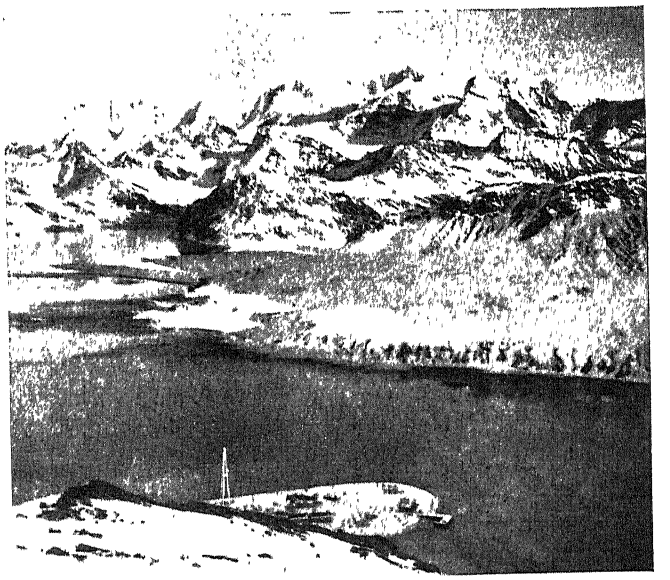
the Indian ocean. Sir Aurel Stein was assisted by the British Royal Air Force in his attempts to demarcate the Roman Empire boundary in present-day 'Iraq. Sir Aurel's work will be incorporated in the international map on the 1 : 1,000,000 scale. During 1937–38 Miss Freya Stark was engaged on historical research in the Hadhramaut in southern Arabia. Frederick Simpich and W. Robert Moore made extensive journeys in the Near East collecting information for use in the construction of the U.S. National Geographic Society's map of "Bible Lands and the Cradle of Western Civilization". Exploring the tributaries of the Sepik river in an attempt to find an easy route to the interior, J. L. Taylor was, at the year-end, mapping one of the last unknown regions of New Guinea Territory (Australian mandate). In June, the Richard Archbold New Guinea expedition began a two-year study of primitive life, and a collection of the fauna and flora in unexplored portions of Netherlands New Guinea. An Everest reconnaissance expedition, sponsored by the Royal Geographical Society, reached an altitude of 27,000 feet before being driven back by storms. Capt. C. W. R. Knight, leader of the 1937–38 National Geographic Society South African expedition, succeeded in making a day-to-day photographic record of the nesting habits of a pair of fierce crowned eagles. V. E. Fuchs in 1938 resumed, in Rukwa Rift Valley of south-west Tanganyika, his work on the structure of Africa.

Polar Exploration. Lincoln Ellsworth and Sir Hubert Wilkins began their expedition in the Antarctic in October 1938; by the middle of December the party aboard the base-ship, "Wyatt Earp", reported it was within 150 miles of the nearest known edge of the solid Antarctic ice barrier. The explorers planned to map the Enderby Quadrant from the air.

The British Graham Land expedition discovered King George VI Sound, separating Alexander Island from the antarctic continent. Its leader, John Rymill, was awarded the Royal Geographical Society's gold medal in 1938. R.R.S. "Discovery", sent on her fifth two-year commission in Oct. 1937, has made expeditions from Capetown, making a brief survey of Balleny Islands and studying seasonal changes in the distribution of whales and plankton, in relation to the position of the ice-edge. R.R.S. "William Scoresby" returned in April 1938 from a seven-month expedition marking whales in the Indian Ocean, and set out again in August on a 17-month antarctic expedition to mark whales for a study of their migrations.

Between Aug. 1937 and March 1938, Sir Hubert Wilkins, who led one party of searchers for the Russian airmen lost while flying over the North Pole in Aug. 1937, flew over 170,000 sq. miles of the Arctic ocean, of which 150,000 sq. miles had never been seen before. Sir Hubert published an account of these flights in the *National Geographic Magazine*. The U.S.S.R. arctic expedition, which had camped nine months on an ice-floe, was rescued in Feb. 1938 near the point at which the Greenland sea joins the Atlantic ocean, having drifted 1,560 miles from a point within 34 miles of the North Pole. The expedition's records on terrestrial magnetism and gravity were especially detailed.

An island 200 sq. miles in area was discovered between Amund Ringnes island and Axel Heiberg Land by the British arctic expedition, led by D. Haig Thomas. Scientists from the Imperial College of Science, London, led by Alexander King, made a geographical survey of the southern part of Jan Mayan island, collected marine specimens, recorded the presence of cosmic rays, collected stratosphere air samples to determine helium content,



F. C. Fraser; from D. Ommanney's "South Latitude"

KING EDWARD'S POINT, SOUTH GEORGIA, WHERE ARE GOVERNMENT OFFICES AND THE "DISCOVERY" EXPEDITION'S MARINE BIOLOGICAL STATION

took magnetic measurements, and made the first land circuit of the island.

The MacGregor arctic expedition, under the leadership of Clifford J. MacGregor, returned to the United States in October after spending 15 months collecting meteorological information. Lieut.-Comdr. I. Schlossbach, a member of the party, flew over the supposed Crocker Land area without seeing land. Louise A. Boyd directed detailed surveys of Germania Land, Greenland, as part of her work for the American Geographical Society.

T. H. Manning continued the survey work of the British Canadian arctic expedition from his base on Southampton Island. Dr. Adolf Hoel led the Norwegian expedition which completed the air survey of the Svalbard archipelago. Dr. Lauge Koch, leader of the Danish arctic expedition, reported that the Fata Morgana islands, supposed to lie between Spitsbergen and Peary Land, were not visible during the flight he made over the region. Dr. E. S. Lingren and Andrew Croft carried out three months' ethnological research in Lapland during the winter 1937–38.

N. and S. American Exploration. In 1938, Bradford Washburn, conducting the Harvard University-National Geographic Society Alaskan expedition, discovered a giant ice-field filling vast valleys at an altitude of 5,000 to 7,000 feet in the region of the Chugach and St. Elias mountain ranges. Wendell Chapman conducted an expedition for the National Geographic Society in the northern Rocky Mountain region, where photographic studies were made in colour of small mammals and birds. E. R. Blake, Field Museum of Natural History, completed a thirteen-month field trip to British Guiana and Brazil during which he collected animal and bird specimens. Dr. G. H. H. Tate, American Museum of Natural History, led the Phelps expedition which explored Mount Auyan-tepui, an elevated plateau 300 sq. miles in area in southern Venezuela. Exploring the jungles of British Guiana and Brazil for the same institution, Dr. W. H. Holden led the Terry-Holden expedition from Georgetown to the Amazon by way of the Sierra Acarai mountains, a route previously untraversed by white men, collecting information on primitive medical practices. Lord Moyne, in his yacht the "Rosaura", visited Bay Islands, off the coast of Honduras, and made a collection of archæological specimens. (G. Gr.)

EXPORTS AND IMPORTS. The year 1938, compared with 1937, was a year of recession. The primary producing countries experienced a shrinkage in the value of their exports, which was due largely to a fall in the prices their exports realized. Meanwhile, they were still importing goods ordered during the period of greater prosperity, which ended in the middle of 1937 Therefore, during the latter part of 1937 and the earlier part of 1938, they experienced a serious deterioration in their balance of payments. During the last half of 1938, they were cutting down imports, and their balance of payments began to look a little better, but their imports underwent a further shrinkage

The United Kingdom. The industrial countries, such as the United Kingdom, had a parallel experience. The fall in world prices reduced the value of their imports of food and primary products, and so reduced the value of their total imports Their exports declined in volume, and so there was some decline in their value Yet on the whole the decline in value was more marked in the case of imports, and so, in the United Kingdom, there was a shrinkage in the actual import surplus On the other hand, the United Kingdom must have experienced some decline in invisible exports, such as shipping earnings and the return on overseas investments. It is doubtful if the complete balance of payments for 1938 will be any better than that of the previous year, which showed a deficit of £52 millions.

Monthly Average	Retained Imports (£ millions)	Exports of British Goods (£ millions)	Import Surplus (£ millions)
1929 . .	92 6	60·8	31·8
1934 . . .	56 7	33·0	23·7
1935	58·5	35 5	23 0
1936 . . .	65·7	36·7	29·0
1937 . . .	79 5	43 5	36·0
1938 . .	71·5	39·2	32·3

The table shows that in value both imports and exports have shrunk since 1937 by ten per cent. The import surplus has therefore shrunk by the same amount. But the volume indices for the first nine months of the year tell a somewhat different story :

1938 *compared with* 1937 (*first nine months*)

	Retained Imports Per cent	Exports Per cent
Value . .	— 5·7	— 10 2
Volume . .	— 1·3	— 12·7
Average Price	— 4·4	+ 2·8

Up to the end of Sept. 1938, the shrinkage in the value of retained imports was not unduly marked. It was also due much more to a fall in their average cost than to a shrinkage in their volume. The 10·2 per cent decline in the value of British exports, however, was entirely due to a shrinkage in volume. Their average price was 2·8 per cent higher than in 1937. In 1938 Great Britain was getting more in imported goods for each volume unit of her exports, but as a result of the higher prices she was charging, she was able to export less.

These trends are further illustrated by the following summaries of the trade returns of different countries :

The United States. The American returns tell a different story, partly because of an important new factor. For several years prior to 1938, the United States had a shortage of wheat, and so much so that she had to turn importer. In 1938, however, she was able to resume her normal function as an exporter of wheat. This greatly mitigated the contraction in her exports, which was a normal consequence of the 1937–38 trade recession, and fall in prices. These latter influences, however, exercised their full force on her imports, which were also reduced because she no longer had to import grain in such large quantities. For these reasons the value of her imports fell by 37·5 per cent, while her exports only fell by 7·8 per cent. The result was an enormous increase in her export surplus There was, however, some improvement in her imports towards the end of 1938 The figures quoted in the table are not strictly comparable, as they only embrace the first ten months of 1938.

Monthly Average	Retained Imports ($ millions)	Domestic Exports ($ millions)	Surplus of Exports (+) or Imports (−) ($ millions)
1929 . .	362	430	+ 68
1934 .	138	178	+ 40
1935 . .	171	190	+ 19
1936 . .	202	205	+ 3
1937 . . .	257	279	+ 22
1938 (10 months) .	161	255	+ 94

France. The French trade returns were necessarily affected in 1938 by the further depreciation of the franc. But while the franc value of imports rose since 1937 by only 6·2 per cent, that of exports increased by thirty per cent. The big disparity between these percentages shows that French export trade has been greatly helped by the May 1938 devaluation. The increase in the value of imports, in fact, is hardly proportionate to the depreciation of the franc, thus indicating some contraction in volume. The increase in the value of exports is great enough to point to an increase in volume.

Monthly Average	Imports (Frs millions)	Exports (Frs millions)	Import Surplus (Frs millions)
1929 . .	4,852	4,178	674
1934	1,925	1,487	438
1935 .	1,745	1,289	456
1936 . . .	2,117	1,288	829
1937 .	3,526	1,995	1,531
1938 (11 months) .	3,742	2,589	1,153

Germany. Fundamentally, Germany resembles England, for both are importers of foods and raw materials and exporters of finished goods. Yet in 1938 England reduced her import surplus, while Germany's export surplus gave place to an import surplus. There are various reasons for this. First, Germany has a controlled economy, the guiding principle of which is that imports are conditioned by exports. Hence there was no room for any increase in the 1937 export surplus ; and had matters so worked out as to bring about an increase, it would immediately have been used to permit of an expansion in imports. This, however, does not explain the replacement of the export surplus by an import surplus.

The reasons for this are largely political. In March 1938, there was the *Anchluss* with Austria, and in October the absorption of the Sudetenland. The latter occurred too recently to affect the 1938 trade returns, but the union with Austria was, from the point of view of Germany's

trade balance, a liability. Many of Austria's exports formerly went to Germany, and so now disappear from the combined trade return of the two countries. On the other hand, Austria has to import some of her staple food supplies, and these come from countries outside the enlarged German Reich. Another cause of Germany's deficit in 1938 lies in her intensive rearmament efforts, including the autumn mobilization of the army. The existence of the deficit looks as if Germany was partially living for 1938 upon the former Austrian gold reserves. But these are not inexhaustible, and so it was not surprising that by the end of the year Germany was making every effort to expand her export trade.

Monthly Average	Retained Imports (Rm millions)	Domestic Exports (Rm.millions)	Surplus of Exports (+) or Imports (—) (Rm millions)
1929 . . .	1,120	1,124	+ 4
1932 . . .	380	478	+ 89
1933 . . .	350	406	+ 56
1934 . . .	371	347	— 24
1935 . . .	347	356	+ 9
1936 . . .	352	397	+ 45
1937 . . .	456	493	+ 37
1938 (10 months) .	449	432	— 17

Some Primary Producing Countries. In conclusion, a comparison of 1937 and 1938 for three primary producing countries is of interest:

	First Nine Months of		Change
	1937	1938	
Australia (£ *stg. Millions*)			
Imports . . .	73·2	80·7	+ 7·5
Exports . . .	106·9	94·8	— 12·1
Difference . .	+ 33·7	+ 14·1	— 19·6
India (*Rs. millions*)			
Imports . . .	1,156	1,053	— 103
Exports . . .	1,590	1,191	— 399
Difference . .	+ 434	+ 138	— 296
Argentina (*pes. millions*) .			
Imports . . .	1,160	1,100	— 60
Exports . . .	1,872	1,046	— 826
Difference . .	+ 712	— 54	—766

In all these countries the drop in imports between 1937 and 1938 is relatively less marked, showing how the goods ordered during the 1936–37 period of prosperity continued to arrive, in all three cases up to the end of the first quarter of 1938. The contraction in exports, on the contrary, is very noticeable indeed. Australia and India maintained their normal export surplus, although it became insufficient to cover their external liabilities on income account. Argentina, who equally has external liabilities to meet, lost the whole of her export surplus. (N. E. C.)

EXTRA-MURAL EDUCATION: *see* ADULT EDUCATION.

EYE, DISEASES OF. Progress of especial importance has been made in recent years in the following branches of ophthalmological practice.

Detachment of Retina. The retina is a delicate membrane-like tissue which lines the posterior two-thirds of the interior of the eyeball, and contains the light-sensitive elements from which impulses are transmitted through the optic nerve to the brain; normally it lies in close apposition to the pigment epithelium, which clothes the middle, or choroid, coat. Separation of the retina from the pigment epithelium occurs not uncommonly, independently of inflammation or tumour-formation; especially in the abnormally long eyeball associated with myopia or short-sight, often as an immediate or remote consequence of a contusion. Ophthalmoscopic examination will very frequently reveal the presence of a hole in the detached retina, lanceolate or horse-shoe shaped, or in the form of a rift at the anterior insertion, through which fluid is able to pass behind the retina. Sight is defective, with distortion of images and more or less loss of the visual field corresponding to the area of detachment. Under treatment other than operative, the eye usually becomes, sooner or later, totally blind, and in cases of long standing it is not infrequently attacked by a painful inflammation which may necessitate its removal. The percentage of successful results of operation was almost negligible until, in comparatively recent times, Prof. J Gonin [1] described a procedure involving accurate localization of the situation of the retinal hole, or tear, with reference to the surface of the eyeball, and proved that by cautery puncture of the coats of the eye at this point, the rent could be occluded and a high percentage of cures obtained. Subsequently a great deal of work has been done in elaborating the technique of operation, the various methods advocated having as a common aim the induction of foci of plastic inflammation in the choroid coat so situated that, after withdrawal of the subretinal fluid the retina will become adherent to, and eventually fused with, the choroid so as to occlude the hole. Statistics show that at the present day in experienced hands fifty per cent of successful results of operation is not unusual.



Theodore Hamblin Ltd]

CONTACT LENSES, WORN BENEATH THE EYELIDS AND INVISIBLE IN USE. DOTTED LINE INDICATES EDGE OF LENS.

Contact Glasses. [2] The idea of correcting an error of refraction by means of a glass in direct contact with the eyeball is more than a century old [3], but until recent times the use of contact glasses got little farther than the experimental stages, mainly on account of the great technical difficulties involved in their construction.

A contact glass consists of two segments so as to bear some resemblance to a cardinal's hat with the brim turned downwards, the radius of curvature of the crown corresponding with that of the cornea or clear window of the eye,

and the radius of curvature of the brim so closely with that of the surface of the eyeball adjacent to the cornea that there is exact apposition of the surfaces at all points; furthermore, the incorporation of a lens in the corneal position of the glass is often required, and at the same time the glass must be extremely light and yet sufficiently strong to withstand the strains incidental to its use.

The earliest type of contact glass was blown. It could usually be worn comfortably, but did not give an accurate correction of error of refraction It was superseded by a ground glass, which corrects error of refraction with greater accuracy, but is difficult so to construct that the brim does not cause uneven pressure and consequent discomfort, and requires the occupation of the narrow space between cornea and glass by saline fluid. The most modern type of glass is moulded on a cast made from the front of the eyeball, and always has spherical lens power ground on its anterior surface. When fitting is perfect, there is very little interference with the blood and lymph circulation and the movements of the eye, and the glass can be worn all day without discomfort

Contact glasses are of great value for the correction of the peculiar astigmatism produced by conical cornea, which can seldom be at all adequately corrected by a spectacle lens, and occasionally for the correction of irregular astigmatism associated with old corneal scars, and for extreme short-sight.

Corneal Grafting. Corneal grafting, with a view to improvement of a gross defect of sight, due to corneal opacity, by the substitution of clear corneal tissue of alien origin for a portion of the opaque cornea, is more than a hundred years old, but it is only during recent years that very considerable progress has been made in this branch of surgery.[4]

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F

FAIRBAIRN, STEPHEN, British rowing coach, was born on Aug. 25, 1862, the son of an Australian sheep-station owner, and died in London on May 16, 1938. He was educated at Geelong Grammar School and Jesus College, Cambridge. Between 1882 and 1886 he rowed in two losing and two winning Cambridge crews against Oxford, besides winning many honours for Jesus College on the Cam and at Henley. As a coach he made his name through the success of his "unorthodox" emphasis upon the importance of leg drive, even to the exclusion of body swing and all other aspects of the art of rowing, and his training of comparative novices on sliding seats instead of fixed seats. It is, perhaps, just to say that his greatest crews were those that approached, though by means of his distinctive methods, most nearly to the ideal of the old "orthodox" school of rowing.



Elliott & Fry]
STEPHEN FAIRBAIRN

FAIRS AND EXHIBITIONS. On May 3, 1938, His Majesty King George VI, accompanied by the Queen, opened the Empire Exhibition at Bellahouston Park, Glasgow. Queen Mary, the Princess Royal, and other members of the royal family visited the exhibition before it closed on Oct. 29. Visitors from all over the world included organizers of the 1939 New York World's Fair and other coming fairs, Danish newspaper editors, and eighty unemployed men, the guests of the Queen. The International Advertising Conference and the International Engineering Congress were held at the Exhibition.

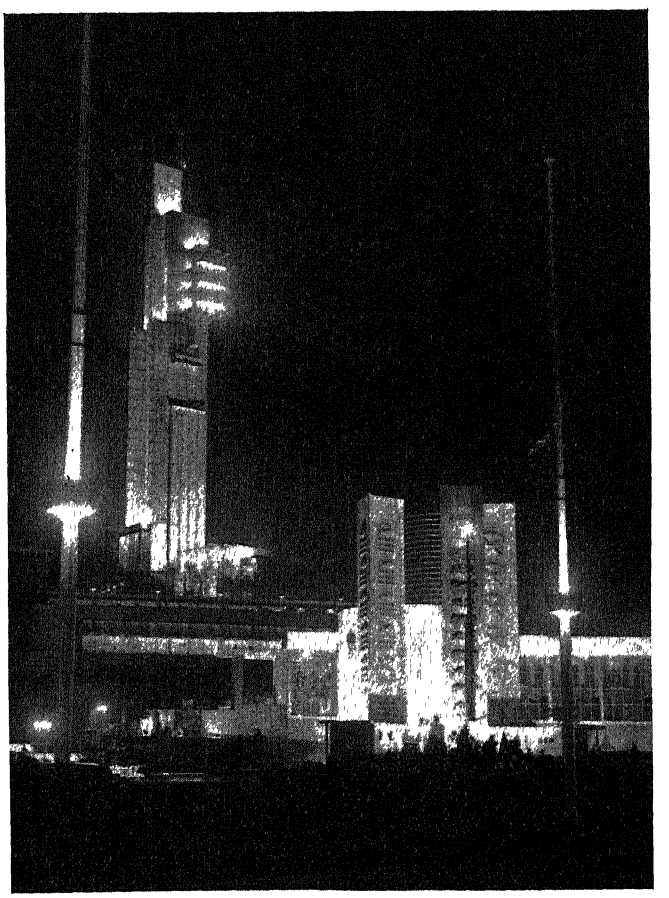
Lord Elgin was president of the Exhibition; Captain S. G. Graham, the general manager; Mr. C. M. Weir, the chairman of the Administrative Committee; and Mr T. S. Tait, the chief architect. The Exhibition covered 175 acres, and included over 100 buildings having a total floor area of one million square feet and costing £10 millions. The largest attendance, on the last Saturday, was 364,092, and the total attendance was 12,593,232. A fine double avenue contained the dominions and colonial exhibits. The Canadian pavilion was built of Douglas fir and Canadian spruce, the South African pavilion reproduced a colonial farm-house. Southern Rhodesia showed a model of the Victoria Falls, which shared with Scotland's model highland village the honour of being the most popular exhibit. The Palace of Art, to which the King lent Wilkie's "Blind Man's Buff" and "The Penny Wedding" from Windsor Castle, will remain as a municipal art gallery. Other features included a 25-acre amusement park, the largest ever contained at an exhibition; the Palace of the Women of the Empire, two Palaces of Industry; a Hall of Engineering; and a 300-ft. Tower of Empire, affording views of Glasgow and its dockyard, and of the highlands.

The British Industries Fair, held in February in London and Birmingham, was visited by the King, the Queen, and Queen Mary. Both attendances and the volume of trade increased. All countries, except Germany and Japan, bought large quantities of toys, and Canada bought 70,000 razor sets.

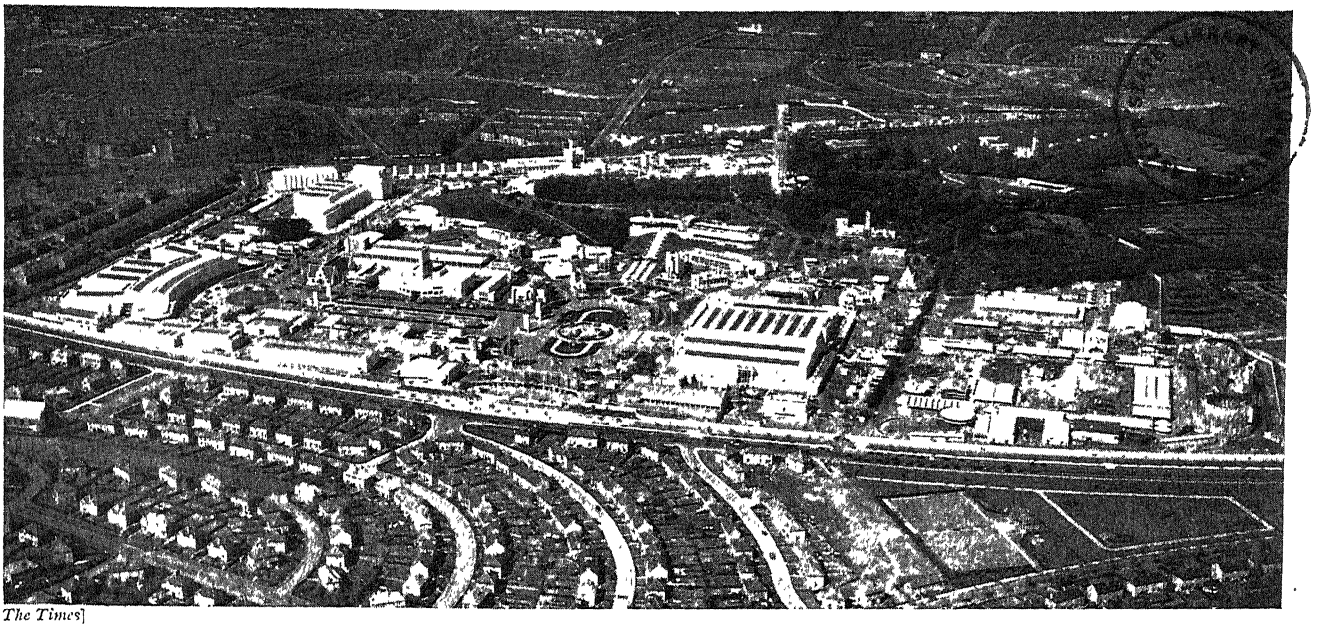
The Duke of Kent opened the Motor Show at Earl's Court in October. There were no radical changes in the design of cars, comfort, value for money, and economy being the points stressed. Though attendances were lower, the number of orders was better than in the previous year. The Scottish Motor Show was well attended. Lord Nuffield opened the Cycle Show at Earl's Court.

At the National Radio Exhibition held at Olympia at the end of August, emphasis was laid on television. The Building Exhibition, at Olympia, was opened by Sir Philip Sassoon, first Commissioner of Works. Air Raid Precautions were the special feature.

The Grocers' 42nd International Exhibition illustrated the range of food-stuffs from Empire sources. Queen Mary visited the Leather Show held at Cordwainers' Hall in June. The Woman's Fair, held in November, was the first to be devoted entirely to the interests of women. It included home planning, furnishing, decoration, domestic science, careers, beauty, and fashion. At the Ideal Home Exhibi-



Topical Press]
FLOODLIGHTING AT THE EMPIRE EXHIBITION, GLASGOW, SHOWING THE EMPIRE TOWER BEHIND THE IMPERIAL CHEMICAL INDUSTRIES BUILDING



The Times]

GENERAL VIEW OF THE EMPIRE EXHIBITION, GLASGOW

tion, opened by Mrs. Neville Chamberlain, special features were the city of glass and the keep-fit demonstrations.

Europe. At the Leipzig Spring Fair, held in March, there were 9,549 exhibitors, an increase of 7·5 per cent over 1937. These included 818 firms from foreign countries, and trade visitors numbered 304,000. In the engineering section were interesting home-produced substitutes for metals. Herr Funk, German minister of economics, opening the Königsberg Industrial Fair in August, expressed satisfaction at the trade position of Germany The Berlin Radio Show in August was the largest ever held, and included the products of Austrian firms.

At the Paris Fair, held at the end of May, the electric-heating section was of special interest Little novelty was shown at the French Domestic Apparatus Exhibition, types were standardized, probably because of rapidly rising costs. The International Aero Show at Paris was postponed for eight days.

Oslo held a Norwegian Exhibition, the first big one since 1914, patronized by King Haakon Budapest City Fair celebrated its centenary in July. At the Prague Fair, held in September, glassware, porcelain, toys, and leather goods were the chief products.

Canada. Lord Stanley opened the Diamond Jubilee Toronto Exhibition, the largest annual exhibition in the world. The band of the Royal Artillery, Woolwich, visited Canada to play at the Exhibition. (V. R.)

United States. In 1939 two major exhibitions will be held in the United States of America; the Golden Gate International Exhibition at San Francisco, California, and the New York World's Fair in New York city. The exhibition in San Francisco opens in February 1939, on a man-made island of 400 acres in the centre of San Francisco Bay. The theme, "Recreation—Man's Gift from a Machine Age", will share in the dedication to Western and Pacific achievements, and to Transport and Communications as symbolized by the World's two largest bridges spanning San Francisco Bay, the transpacific air routes, the giant water and power projects of the west, radio, cinema, and television. After the close of the exhibition the island will become the metropolitan airport. This exhibition's palaces combine the beauty and dramatic phases of oriental and occidental architecture. Internally these palaces more nearly follow the older type plan of large halls with great roof spans, externally presenting an appearance and expression of unity and harmony. The main backbone of the plan is L shaped, made up of two avenues at right angles to each other. At this main intersection is a great circular court in which the dominating feature is the Exhibition Tower, 400 ft high

The New York World's Fair opens in May 1939, and presents an entirely different picture, being much larger in size, covering 1,216 acres, including gigantic parking areas, and transport facilities designed in anticipation of more than 60 million attendance The site is at Flushing Meadow Park, in the Borough of Queens, Long Island. Here the Exhibition is reclaiming a swamp which, at its close, is to become an important and large public park. The theme of the Fair speaks of the "World of To-morrow". It was the idea of its sponsors that the exhibits of industry, science, art, education, and governments should portray a vast panorama, showing that what man is building to-day will be the World of to-morrow, with emphasis on the vital necessity of rational co-operation among all the nations and peoples and classes.

The plan of the exhibition is functional in that the designers have placed an important plaza at each entrance, leading in through broad avenues to the focal theme building called the "Trylon and the Perisphere"; the Perisphere being a true sphere 180 ft. in diameter, alongside which stands the Trylon, triangular in plan and tapering to a point some 728 ft. in height. Inside this theme building will be a dramatic and serious presentation of the Exhibition's theme, emphasizing the interdependence of man. All phases of American industry, commerce, and transport will be shown, many in their own individual buildings. The architecture will reflect the individual freedom of thought of those creating it. Similarly this repeats itself in the most gigantic foreign participation that any American exhibition has ever had; some 63 foreign nations are showing in buildings adjacent to the United States Federal Group and surrounding the Court of Peace.

See Architectural Review, July 1938 (The Architectural Press, Queen Anne's Gate, Westminster, S.W.1).)

FALKLAND ISLANDS. The British colony of the Falkland Islands and Dependencies consists of the East and West Falkland Islands in the South Atlantic, and the Dependencies of South Georgia, South Orkneys, South Sandwich Islands, South Shetlands, and Graham Land. South Georgia (area 1,150 sq. miles) is the only area in the Dependencies habitable all the year: whaling is its industry.

Area and Population (Colony):
Area 4,618 sq. miles.
Population (est. Dec. 31, 1937) 2,391.
Governor. Sir H. Henniker-Heaton, K.C.M.G.
Production:
Colony (1937): Sheep, 604,346; Wool, 4,206,235 lb. (£259,512).
Dependencies (1936-37): Whale oil, £305,049; Guano, £34,328; Seal oil, £36,006.
Overseas Trade 1937, Colony and Dependencies:
Imports, £487,704; Exports, £601,662.
Finance 1938:
Colony: Revenue, £91,720; Expenditure, £80,945.
Dependencies: Revenue, £15,545; Expenditure, £13,829.
Education 1937. Children under instruction, 387.

FARM MACHINERY. The rapid and widespread development in the use of tractors in recent years represents marked changes in farm practices, speeding up, and an economic evolution in the farming industry comparable to modern developments in manufacturing industries. Significant in this progress are rubber tyres for tractors and the power take-off, a simple device originally developed in France. By means of the power take-off, general-purpose farm tractors supply not only the motive power to draw machines over fields, but also the operating power required by such machines as combines, which harvest and thresh grain in one operation. Formerly combines required their own separate, built-in power plant. As a result of the power take-off "baby" combines are in widespread use on smaller farms, whereas the former large combines were practicable only on very large farms. More efficient application of tractor power to tillage, planting, cultivating, and harvesting have developed a decided trend to the "family size" farm which can be power-operated with little or no outside help even in seasons of peak loads, such as harvest and planting time.

Combines are used in harvesting and threshing wheat, rye, oats, barley, beans, peas, alfalfa, and clover. A still smaller "baby" combine, to cut a swath of only 3 ft. 6 in., appeared in 1938. Most tractors now built have pneumatic rubber tyres for greater speed, comfort, and fuel economy. Tractors equipped with cabs appeared in 1938. Harvesting operations vary widely, but the top speed is now about ten miles per hour. That speed is being steadily increased, with possibilities of its being doubled some day.

According to recent estimates, farm tractors in Great Britain numbered 46,000 in 1937; in the United States (April 1, 1938) there were 1,527,989.

FASHION AND DRESS. In 1938 fashionable women the world over put their hair up on top of their heads. Immediately they looked like their own grandmothers. It was only logical, then, for so-called "daguerreotype" fashions to be revived. So this year produced a pageant of old-fashioned new fashions. Among these were small hats "perched" rather than "worn" on the head. For the first time in many years millinery was elaborately trimmed with ostrich feathers, flowers, ribbons, and, nine times out of ten, garnished with a veil. Hatpins were occasionally seen. High collars, sometimes even boned, came back. Shirt-waists appeared again. Muffs of all



Condé Nast Publications Ltd.]
IN 1938, WOMEN PUT THEIR HAIR UP AND WORE CLOTHES REMINISCENT OF THEIR GRANDMOTHERS

shapes and sizes, from pillow to pigmy, had a vogue. At night grand toilettes came into being—ball gowns, in fact. These were crinolines, often with strapless off-the-shoulder *décolletages*. Evening head-dresses of feathers, flowers, veiling, or ribbons made their appearance. Long gloves were revived. Velvet was tied round the throat; jewelled dog collars were worn, and the preference in jewels for the evening was for old-fashioned period pieces. In fact, all smart women in 1938 had definitely a period look. By day they tended to be Edwardian; by night they had a Victorian air about them.

Underneath these decorative and elaborate clothes more corsetting was logical in 1938. Since womanliness rather than sophistication, charm rather than functionalism, were the keynotes in dress during this year, even figures changed. Streamlining went out; small waists and curves came in. Hence, corsets were cut higher above the waist, were boned more than heretofore, and were even laced occasionally.

This general revival of femininity curiously seemed to produce two schools of dress design. The result of this was that half the chic women of 1938 looked as though they had walked out of a Toulouse-Lautrec canvas; the other half seemed to have stepped from the pages of Louisa May Alcott. But whether a woman's costume of the moment was in the naughty or the nice tradition, there was no doubt about one thing, and that was that she was a woman. Sex asserted itself in the mode of 1938 in no uncertain terms. Even sports clothes in this year grew more feminine and less functional. In this category of clothes, a peasant-like feeling seemed to be the inspiration. Women took to tying kerchiefs under their chins out-of-doors and to wearing full-skirted dirndl-like frocks in the country.

There were two exceptions to the generally delicate and feminine aspect of clothes in 1938. One had to do with furs. After years of svelte, sleekly fitting furs, a husky,

Eskimo type of coat became an accepted alternative. Often these coats were made with hoods. Hoods, as a matter of fact, were a 1938 idea that also frequently appeared on cloth coats (usually for sportswear) and on evening wraps. This new silhouette in fur coats also brought about the use of many long-haired furs which had a tendency to be light and speckled, such as lynx and South American guanaco Another important change in fur fashions was the declining use of silver fox as a trimming For years the silver fox trimmed coat had become almost a winter uniform with women of fashion In the winter of 1938, a number of them rejected it in favour of mink-trimmed coats.

The second exception to the prevailing preference for soft feminine design in 1938 occurred in the realm of shoes. The " platform " shoe, that is, the shoe with a built-up sole, sometimes shaped like a wedge and varying in thickness from about two to four inches, became generally popular, chiefly for beach and sportswear

As 1938 drew to a close, and the French dressmakers launched, in November, what is known as their Mid-Season Collections—their last word on fashions for the current year, and their first intimation of the shape of things to come in the New Year—women's clothes grew no less feminine, but they did grow younger. The mode took on an increasingly child-like air, expressed in such ways as demure petticoats made to show beneath the hems of frocks, modest *piqué* touches at the throat, young sailor hats clapped naively on the backs of smart heads. It began to look as though the " Little Women " were worsting the *femmes fatales*—as though Louisa May Alcott had triumphed over Toulouse-Lautrec.

Probably this was because the one thing that caused the whole mode of stately Edwardian clothes in 1938, namely, the hair up on top of the head, made women look older. They found that they liked being feminine again, but would it be human to expect them to remain for long content to look older ? In the end it seemed as though a compromise were found. As the year closed, it left women still revelling in their natural curves, their revived pink and white complexions, their general softness. But they began to wear their hair half-way between up and down, that is, piled high in front but cut and curled to the shape of their heads in back. This still achieved a period look, but it did not age. So the stately clothes the Edwardian *grandes dames* seemed to demand logically gave way to the new-old-fashioned " Little Women " frocks of the closing year.

Finally, the prevailing note of modesty and demureness in dress brought about yet another fashion known as monastic. It described dresses and coats cut like shifts, but anchored at the waist by simple belts. The result was a type of costume that hung in soft, easy folds, reminiscent of the habits worn by monks. (E. PE.)

FATHER DIVINE, spiritual leader of a community, chiefly Negro, in Harlem, New York city, and elsewhere. Over his birth in a southern state, there seems to be uncertainty, but his name is stated to have been George Baker. His age is somewhere about fifty. For a time, he lived in Baltimore and his religious fervour was characteristic of his race. His experience included repeated awakenings, and he developed a gift for evangelical oratory. From humble occupations in the garden, he emerged as Major J. Devin, which name became Father Divine, Dean of the Universe. His wife is known as Mother Divine. He asks for no collection, but those who confer their property and earnings on him, also assuming new names such as Onward Universe, are granted the dignity of Angel. Father Divine owns real estate in New York city and is responsible for various community enterprises. During the year 1938, he acquired an additional " promised land ", namely 500 acres at Krum Elbow on the Hudson, immediately opposite to the Roosevelt home at Hyde Park. Early in 1939 there was talk of his followers establishing a " heaven " in England. Father Divine's demeanour is friendly and cheerful His favourite greeting is " Peace Everyone ". The number of his disciples cannot be given precisely. It runs into thousands, but is sometimes exaggerated.



Associated Press]
FATHER DIVINE

FEDERAL BUREAU OF INVESTIGATION of the United States Department of Justice is charged with the duty of investigating violations of the laws of the United States, collecting evidence in cases in which the United States is or may be a party in interest, and performing other duties imposed upon it by law. Since the appointment of its present director, Mr J. Edgar Hoover, in 1924, the bureau's development has been along two lines : namely in detection and apprehension, and as a national service agency to all law enforcement organizations.

In the fiscal year of 1938, over 5,400 convictions were secured in cases investigated by special agents of the FBI. During the year 3,233 stolen cars were recovered which were transported in inter-State commerce. Since the passage of the Federal Kidnapping Act in 1932, 127 cases of kidnapping and plots to kidnap were reported to the FBI, and on July 1, 1938, 123 of the cases had been completely solved. Bank robbery reached its peak in 1932, and, following the passage of the Federal Bank Robbery Act in 1934, bank robberies have declined nearly eighty per cent. In the past year convictions were secured in 95·93 per cent of the investigated cases which were brought to trial.

In 1924, the Identification Division of the FBI was founded with a nucleus of 810,000 fingerprint records, and on July 1, 1938, nearly nine million fingerprint records were on file. Despite this growth, it is possible to identify an incoming set of impressions in three minutes. A total of 1,692,890 fingerprint records were received last year as against 1,382,666 in the preceding year. Nearly 57 per cent of all criminal prints received last year were identified after search through the files. The technical laboratory last year made 5,994 scientific examinations, 1,258 of which were for local authorities. These examinations involved over 66,500 different specimens.

The cost of operating the FBI in the past fiscal year was $6,200,000, while savings to the government, property recoveries, and fines imposed in cases investigated by bureau agents totalled over $47,000,000, or $7·64 for every one dollar spent. (*See* also CRIME ; KIDNAPPING.) (J. E. H.)

FEDERAL CAPITAL TERRITORY: *see* AUSTRALIAN CAPITAL TERRITORY.

FEDERAL RESERVE SYSTEM. Monetary and credit conditions in the United States continued extremely easy in 1938. During the year commercial bank reserves

in excess of legal requirements, which represent funds available for expansion of loans and investments, increased steadily. Private and other institutional investors also held a large volume of idle funds. As a consequence open-market money rates and yields on high-grade securities declined, and by the end of the year had either approached or established record low levels From the monetary standpoint, therefore, conditions remained favourable for encouragement of business activity and general economic progress

From the end of 1937, to early in December 1938, excess reserves of member banks of the Federal Reserve System, which comprise about eighty per cent of the country's commercial banking resources, rose by nearly $2,300 millions to the unprecedented level of $3,500 millions This increase resulted chiefly from (*a*) large gold imports, (*b*) expenditures by the Treasury from its inactive gold account, and (*c*) a reduction in reserve requirements by the board of governors of the Federal Reserve System. The latter two actions were taken as a part of the government's broad recovery programme announced in April

In Feb. 1938 the Treasury modified its gold policy of increasing reserve requirements and of accumulating gold stock in an inactive gold account by providing that from Jan. 1, 1938, gold acquisitions would be included in the inactive gold account only to the extent that such acquisitions exceed $100 millions in any calendar quarter.

In April 1938 the Treasury and the board of governors took action to increase the volume of member bank excess reserves. The Treasury discontinued the inactive gold account entirely and deposited with the Federal Reserve banks $1,400 millions of gold previously held in that account, while the board of governors reduced member bank reserve requirements by approximately $750 millions.

Although excess reserves are at a new high level, there is no immediate prospect of an inflationary expansion of credit. The principal concern of the Reserve System at present is to assure the maintenance of an abundance of funds in order that credit needs of business may be accommodated readily at low rates and thus contribute to the orderly continuation of the business recovery in progress since the spring of 1938. From a longer-term viewpoint, however, the existing large volume of excess reserves, which is likely to be increased substantially further over the period ahead, provides the basis for a potential expansion in credit and constitutes a possible threat to future economic stability. Should circumstances arise which might precipitate such an injurious expansion, the Federal Reserve authorities would need additional powers to deal with the situation. (M. S. E)

FEDERAL THEATRE is a project of the United States Works Progress Administration, organized under the Emergency Relief Appropriation Act of 1935 to give employment to needy professional theatre people. Payment at a security wage is less than the prevailing pay for corresponding work in industry, but adjusted, through hours, to meet that wage. Nine out of ten employed come from relief rolls. Nine dollars out of ten must be spent for wages, leaving only one dollar out of ten to meet all theatrical and operating costs. At the outset of the programme 12,700 people were employed in 29 States. Through the return of theatrical people to private industry, employment on Jan. 15, 1939 was 7,900 in twenty States.

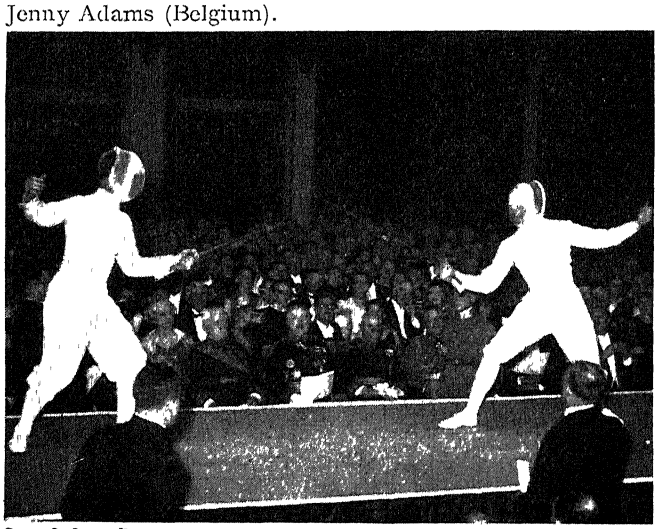
The National Policy Board, made up of directors from each region, plans the season as a whole, and has consistently offered an ambitious programme of classical and modern plays, dance dramas, marionette shows, musical comedies, children's plays, and cycles by such distinguished dramatists as Eugene O'Neill and George Bernard Shaw. Over 100 new plays by American dramatists, many dealing with regional American material, have been produced.

The Federal Theatre has invented the technique of the "Living Newspaper", a terse cinematic type of production dealing with such social and economic subjects as agriculture, power, and housing Through its research division the Federal Theatre is conducting experiments in the fields of writing, design, and light. It also provides script and advisory service for community theatre groups in every State. A recent innovation is extensive touring through rural areas.

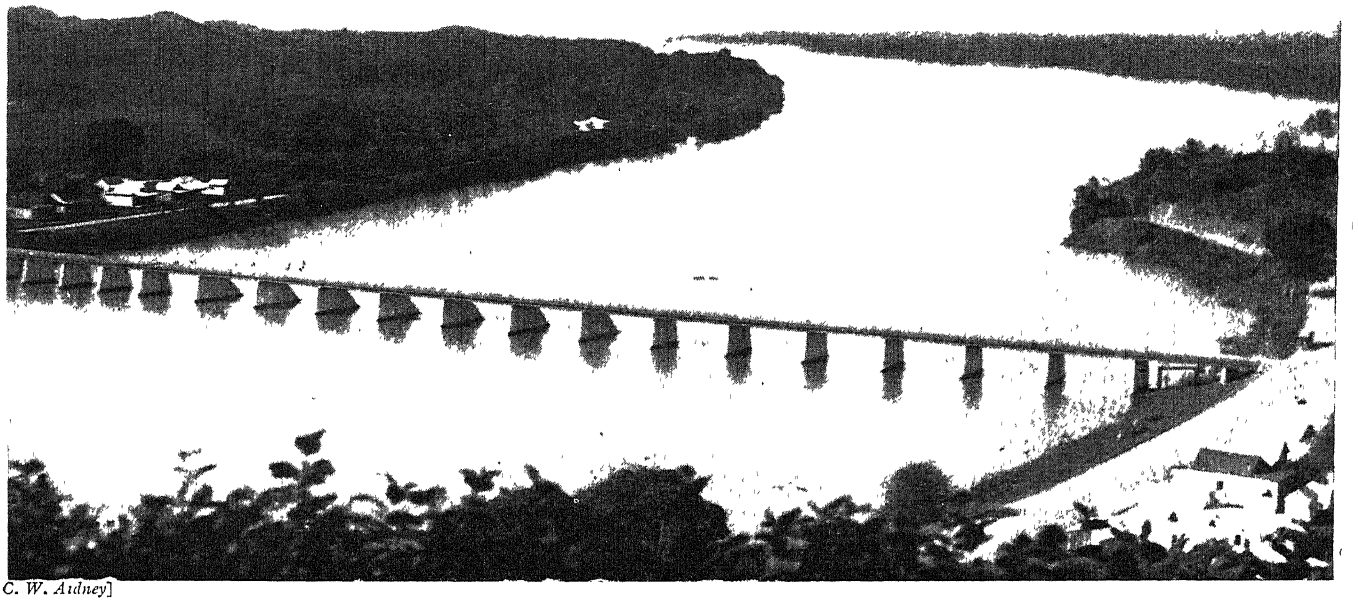
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FENCING. The revival of interest in fencing in Great Britain has continued, and a number of important innovations have been made during the year. Among these are the official recognition of the university and public school championships; the inclusion of a ladies' team in the annual Anglo-Scottish match (won by Scotland); the establishment of West of England championships (held with great success at Falmouth), and an international meeting which took place at Hassocks, Sussex, and received excellent support from British and Continental fencers.

The final pool of the amateur épée championship, judged for the first time by the electrical apparatus, was won by C. L. de Beaumont, London Fencing Club, for the third successive year—a record for this event; J. Emrys Lloyd, also of the London, won the foil championship for the seventh time (another record), and A. G Pilbrow, of the Salle Bertrand, the sabre. The ladies' foil championship went to Mrs. C. Penn Hughes of Gauthier's; the Savage Shield team épée competition to the London Fencing Club, the Miller Hallet cup (individual épée) was won for the sixth time by C. L. de Beaumont, and the ladies' international championship for the Hutton Cup fell to Mlle. Jenny Adams (Belgium).



Sport & General]
LIEUTENANT BUHAN, WORLD CHAMPION FINALIST 1938, FENCING WITH BATTESTI, FRENCH FOIL CHAMPION OF ARMY MASTERS, AT THE CERCLE MILITAIRE, PARIS, JUNE 18, 1938



C. W. Aidney]

BRIDGE ACROSS SIGALOKA RIVER, VITI LEVU, FIJI

In the United States the national champions for 1937–38 were: foil, Dernell Every, N.Y.A.C.; épée, José R. de Capriles, Salle Santelli; sabre, John R. Huffman, N.Y.A.C., three-weapon, John R. Huffman, N.Y.A.C.; outdoor épée, M.A. de Capriles, Salle Santelli; outdoor sabre, John R. Huffman, N.Y.A.C; women's foil team, the Misses Helene Mayer, Dorothy Locke, and Marie Cerre.

FERNANDO PO: *see* SPANISH WEST AFRICA.

FERTILIZERS. The use of commercial fertilizers in world agriculture continues to show notable and persistent increase. The fourteen elements held essential to plant growth are well known. They are: nitrogen, phosphorus, potassium, calcium, carbon, hydrogen, oxygen, magnesium, iron, sulphur, manganese, boron, copper, and zinc. The carriers of nitrogen, phosphorus, and potassium are considered the most necessary ingredients in commercial fertilizers because most farm soils are deficient in these elements. Likewise, crops remove them and calcium in larger quantities than the other ten. Carbon, hydrogen, and oxygen are obtained by plants from air and water. With continued cropping it has become progressively apparent that certain soils are deficient in one or more of the remaining seven elements, now commonly referred to as the minor or trace elements. As a rule, it is necessary to add only relatively small amounts of the deficient elements.

Statements of some investigators that certain additional elements are essential to plant growth are the subject of considerable debate at the present time.

Recent outstanding manufacturing developments include the granulation of fertilizers and fertilizer materials. New products under experimentation are calcium metaphosphate and potassium metaphosphate.

World consumption of nitrogen in fertilizers in 1936 was 2,214,000 metric tons, contained in 12,013,000 tons of nitrogen-bearing materials, principally ammonium sulphate, nitrate of soda, and calcium cyanamide. World consumption of phosphates in fertilizers in 1936 amounted to 22,855,000 metric tons, including 15,700,000 tons of superphosphate and 5,000,000 tons of basic slag and containing 4,052,750 tons of phosphoric acid (P_2O_5). World consumption of potash in fertilizers in 1936 consisted of 7,061,500 metric tons of potash salts, containing 2,295,000 tons of pure potash (K_2O). Total world consumption of 41,929,500 tons of fertilizer materials contained 8,561,750 tons of plant food in the ratio 1N–1·83 P_2O_5–1·036 K_2O.

World reserves of plant food are enormous when considered in the light of consumption. Inexhaustible supplies of atmospheric nitrogen can be recovered for use through legume fixation or synthetic processes. Known deposits of high-grade phosphates are estimated to contain well over 17,000,000,000 tons, sufficient to last 1,500 years at present rate of consumption with additional known lower-grade deposits sufficient for thousands of years more. Potash reserves are estimated sufficient for at least 1,000 years at present rates of consumption.

FEY, EMIL, Austrian soldier and statesman, was born in Vienna on March 23, 1886, and died on March 16, 1938. Major Fey served with distinction in the World War, and received the Maria-Theresa Order. In 1930 he was in command of the Viennese Heimwehr, and later became one of the most powerful supporters of Dr. Dollfuss, under whom he held office as a Federal Minister and State Commissioner-General for the Interior. When Dollfuss was murdered in 1934, Fey was being held prisoner by the Nazi conspirators. Fey continued in the government under Schuschnigg until Oct. 17, 1935, when he resigned, shortly afterwards being awarded the Grand Cross of the Order of Merit. In Nov. 1935 he relinquished the leadership of the Heimwehr to Prince Starhemberg, but regained it the next year. Prince Starhemberg's attack upon Fey's conduct at the murder of Dollfuss was completely rebutted in March 1937. On the dissolution of the Heimwehr, Fey's activities were brought to a close; in March 1938 he was found shot with his wife and child, being stated to have committed suicide rather than accept Germany's absorption of Austria.

FIJI. A Crown Colony of the British Empire in the western Pacific Ocean, comprising some 250 islands, of which about eighty are inhabited.

Area and Population:

Area 7,055 sq. miles.
Population (Dec. 31, 1937) 205,397 (European 4,238, Indian 89,333).
Capital, Suva (pop. 1936, 15,522).

Governor. Sir Harry C. Luke, K.C.M.G.
Production 1936-37 :

Sugar	120,692 tons	Gold	24,917 fine oz.
Copra	31,000 tons	Silver	2,462 fine oz.
Bananas	327,000 bunches	Cattle	70,000
Pineapples	2,560 lb. fresh, 87,700 lb. canned		

Overseas Trade, 1937 :
Imports, £Fiji 1,700,744; Exports, £Fiji 2,213,657.
Communications, 1937 :
Roads: metalled, 226½ miles; gravelled, 312½ miles
Shipping: entered, 941,052 tons; cleared, 926,528 tons
Finance, 1938 :
Revenue £Fiji 831,591; Expenditure £Fiji 782,374.
Public Debt . . . . . £Fiji 1,414,030
Exchange rate . . . £Fiji 125 = £ stg. 100

FINANCIAL REVIEW. World financial affairs in 1938 were marked by a series of secondary fluctuations which obscured any distinct long-term trend. The fluctuations, moreover, affected different countries at different times and in different ways. Roughly speaking, however, there were four main phases. The first phase, lasting from January to May, can be described as "bumpy weather", the general effect being one of increasing depression—an intensification of the factors operating since the fall of commodity and stock exchange prices in the middle of 1937. Then in June 1938 began a phase of recovery, persistent enough to be distinguishable from the occasional minor upward movements of the earlier months. That phase was brought to an abrupt end by international political disturbance, which began in August and reached its climax at the end of September. During this third period all ordinary economic forces became gradually subordinated to the fear of world war. The Munich settlement was followed by a resumed phase of revival in financial markets, and this phase—again with secondary variations—continued to the end of the year.

The four phases, with the exception of the first, were not very clearly reflected in the course of average commodity prices. Between Dec. 29, 1937, and May 25, 1938, the *Economist* indices of the prices of primary products in Great Britain and the United States fell respectively from 147·4 to 132·2, and from 135·3 to 121·9, that is to say, by approximately ten per cent in each country. A simultaneous rise of seven per cent in the index (*Statistique Générale*) of French wholesale prices was associated with rising internal costs and a falling external value of the franc. From that period onwards the curves of prices of primary products in Great Britain and the United States diverged. In Great Britain, the index already cited fell from 138·0 on Aug. 3 to 132·4 on Dec. 21; while between the same dates the American index fell very slightly from 127·1 to 126·5. This steadiness of American prices compared with British prices was all the more striking in that the pound meanwhile depreciated against the dollar.

On the whole, however, the latter period of the year was one of rising world prices, and they would no doubt have risen further but for the relaxation of international restriction schemes. Thus the permissible output of copper was raised on Oct. 10 from 95 per cent to 105 per cent of standard tonnages, and a week later all restriction was removed. The international rubber committee, which in September had fixed the quota for the last quarter of 1938 at 45 per cent of standard output, two months later raised the figure by five per cent for the first quarter of 1939. The position of the tin quota was complicated by the introduction in July of a scheme to accumulate a "buffer stock"; this required a special quota of ten per cent in addition to the ordinary quota of 35 per cent. These rates were continued to the end of the year, and were maintained for the first quarter of 1939. The price of tin, however, rose substantially; as no sales were made from the buffer stock, it appeared that the International Tin Committee were aiming for still higher prices.



Associated Press]
DR. FUNK, WHO SUCCEEDED DR SCHACHT AS PRESIDENT OF THE GERMAN REICHSBANK, JAN. 20, 1939

Apart from political hopes and fears in the international field, the main-spring of commodity price movements and general financial conditions in the world at large was the course of business sentiment and actualities in the United States. These themselves had an important political background. The Wall Street stock market was highly sensitive to political signals, and one of the most striking economic facts of 1938 was the way in which stock prices tended to lead rather than follow movements of trade and industry. It was also significant that in the United States the consumption goods industries recovered in advance of those producing capital goods.

A fairly favourable trend in Wall Street in the first two months of the year was followed by serious collapse in March and early April. To troubled international conditions and national political fears was added technical distrust aroused by the indictment of Mr. Richard Whitney. The defeat of the Reorganization Bill promoted by the President initiated a sharp recovery, the Dow Jones average of industrial share prices rising 5¾ points in one day. The crisis of May 21 over Czechoslovakia had little permanent effect on international stock markets, and after some weeks of indecision a definite upward movement of Wall Street prices set in during June. By the end of that month all the ground lost earlier in 1938 had been recovered. The Dow Jones index, which had stood at 110·6 on June 1, rose to 137·8 on July 6. Although the stock markets were discounting in advance an industrial revival which was slow to materialize, the gains were held or even increased until the end of August.

Meanwhile, prices on the London stock exchange had followed roughly the same curve as Wall Street, though with less volatility and with a tendency towards greater depression. This was due partly to the relative closeness of the war danger—a factor exemplified both at the time of the Austrian crisis in March and during the rising anxieties of August—and partly to the heavy burden laid on all economic activity by the finance of rearmament. The London market nevertheless showed surprising resistance to a severe British budget (*q.v.*).

Despite strong counter-efforts by the German government, a sharp collapse of prices occurred on the Berlin bourse during July and August. Anxieties over the international future no doubt enhanced the bear movement, but the chief reasons assigned at the time were the increasing burden of taxation, the widespread feeling that the peak of industrial profits (previously inflated by spending on armaments and for the Four Year Plan) had been passed, and the forced liquidation of Jewish accounts.

Throughout September all financial markets were dominated by the international crisis. Although serious falls of

stock prices were recorded in London and still more in Paris, the Wall Street market was more nervous than either. During the final week of the crisis, minimum prices for gilt-edged securities were fixed in London, and for two days they became effective The news of the Munich Conference was followed by a rush of buying on all stock markets. Later reflections were more sober, and there were a number of dull and nervous periods before the end of the year. Improved industrial news, however, was forthcoming in Great Britain and other countries, while in the United States the markets took heart from the Republican gains at the November elections But by the end of the year no great advance had been made from the platform established immediately after the September crisis.

The course of bond prices was not so plainly marked. Political anxieties and the shadow of rearmament finance caused a net fall of prices of British government securities, whereas government bonds remained comparatively steady in the United States. Over the world as a whole, the year saw no significant change in the long-term rate of interest. International bond markets, however, were naturally depressed by successive political disturbances. Austrian five per cent bonds of 1930 fell from a high point of 102 to a low point of 23, though they recovered to 50 and higher before the end of the year. Chinese bonds, which were marked down heavily as Japan extended control over the ports and revenues of China, also finished the year well above their lowest point. The same is true of Czechoslovakian bonds, the eight per cent issue falling from 74 on Aug. 24 to 40 on Oct. 19, and recovering three weeks later to 63½ There were scarcely any new international issues of capital, though the British censorship on the export of new capital was relaxed in February, chiefly in favour of the repurchase of large blocks of existing securities. Under this dispensation, British control over a famous drug business was regained, and a block of shares valued at more than £6 millions in a still more famous multiple store passed from American to British hands in November. For the year, new issues on the London market for overseas countries totalled £59·4 millions (practically all for countries in the British Empire) and for home borrowers £213·7 millions, the comparable figures for 1937 being £70·5 millions and £387·5 millions. In the United States a comparative falling off of new issues for internal purposes (there being virtually none for export) during the first half of the year was offset by a comparative spate during the later months.

Short-term rates of interest remained low. The governments and central banks of the principal free-exchange countries retained a policy of " cheap money," and even the September crisis caused no reversal of this beyond a rise in the French bank-rate from two and a half per cent to three per cent on Sept. 28. In London the rate of discount on new Treasury bills temporarily rose above 10s. per cent. The international movements of money resulting from the crisis caused greater stringency than internal factors, but the central banks concerned were at pains to offset them by open-market action. Two special efforts in the direction of easy credit conditions deserve mention. In July the French government took steps to create a complete money-market in Paris. A decree authorized the Bank of France to operate in short-term treasury bills, National Defence bonds, railway bills, and first-class commercial bills ; a new discount company would also be formed. The second occasion was the enlargement of the credit base in the United States. During the first half-year some $1,400 millions of gold in the Treasury's inactive gold fund were gradually monetized, and the reserve requirements of the Federal Reserve banks were reduced by some $700 millions. In July Federal Reserve member banks were authorized to grant loans up to ten years instead of only nine months, and to hold unlisted bonds of local companies in their portfolios provided they were amortized up to 75 per cent. The acceleration of American business activity was attributed in large part to this credit expansion, coupled with expenditure under the Federal Housing Act and other New Deal measures, and the release of private capital as a result of the new Tax Act, which relieved taxes on undistributed profits and on capital gains.

In the international movement of short-term money, there were four main phases which roughly corresponded to the four phases in general financial affairs In the first half of the year the depression of business and stock market prices in the United States caused a certain withdrawal of foreign funds from that country. The total net outflow of capital in six months (including long-term capital) was $375 millions Up to late April, on the other hand, confidence in the future of France and the franc was weak, and money continued to pour out of France. The chief recipients of international short-term capital were Great Britain, the Netherlands, and Switzerland. This phase was ended with the advent of M. Daladier's government in April, followed by the revaluation of the franc, and with the upturn in American business.

When rumours of impending revaluation first began to circulate, the franc was sold down from 158 to 167 to the pound. Although the French control fund tried to intercept this movement, when the revaluation was actually announced the lower limit of the franc's permissible fluctuations was fixed at the equivalent of 179 to the pound, and this figure was soon afterwards reached on the markets. The depreciation of the franc caused considerable strain on the belga, which was unable to follow on account of its anchorage to gold, and this strain continued throughout the year.

The third phase in short-term capital movements was the brief one associated with the European crisis of August and September. But, before it began, the return of capital to France which had followed the revaluation had already been reversed. From time to time rumours of the probable devaluation of the dollar, coupled with political nervousness, had revived a flight into gold, causing large quantities of the metal to change hands in London at a premium above New York parity. But on the whole the dollar was strong. Its basic economic strength, founded on the large American credit balance of payments, was reinforced by rumours of forthcoming stabilization between the dollar and sterling at the old parity of $4·86⅔ to the pound, compared with a then existing rate of $4·90 or more. At the end of August, however, the pound crossed this historical rubicon without any special action by the authorities. Heavy operations in gold arbitrage took place, while " hot money " movements were dominated by the imminent fear of war. There were also large transfers of gold on behalf of the various exchange management funds. Between Aug. 5 and Sept. 15, gold bullion to the value of £62½ millions was exported from the United Kingdom ; most of it went to the United States, but it included significant withdrawals for Sweden, Switzerland, and the Netherlands. In the following three weeks, ended Oct. 6, gold exports exceeded £86 millions. To the other chief importers were now added Canada and Ireland. Over the whole period of two months, countervailing purchases of gold by the United Kingdom totalled £62 millions, the chief non-producing suppliers being Belgium

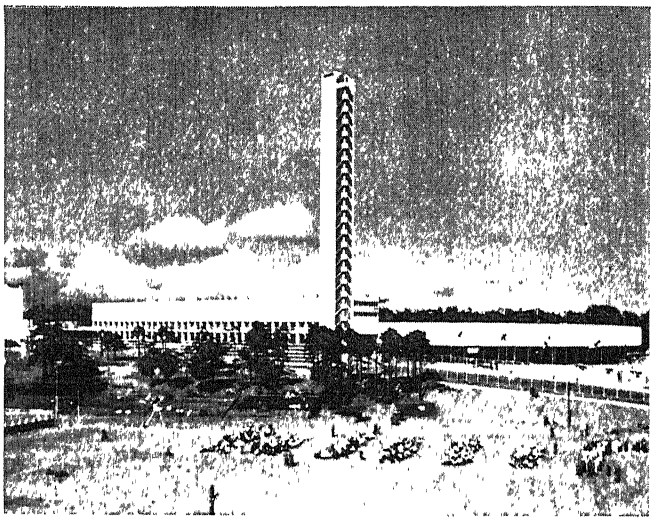
and France Between Aug 11 and Oct 6 the monetary gold stock of the United States rose by $779 millions, this being roughly equivalent to Europe's losses From January to July, American imports of gold had totalled $306 millions.

The losses of gold from the British exchange equalization account during the September crisis considerably depleted its resources On March 31, 1938, however, its holdings of gold had totalled nearly £298 millions, in addition to £537 millions in the Bank of England. By Sept. 30 they had fallen to £152 millions Early in the new year the Bank sold to the account £200 millions of gold, worth approximately £350 millions at current market valuation Meanwhile the pound had been allowed to depreciate against the dollar On the morrow of the Czechoslovakian crisis (Oct. 1), the London rate on New York was $4·82¼, but at the end of the year the rate was only $4·66. The fall of sterling against the dollar gave support to the franc against the pound, and the London-Paris rate of exchange at the end of the year was 177·10 francs to the pound. The franc, however, had also been helped considerably by the defeat of the general strike early in December and by the acceptance of M. Reynaud's plan of financial and economic reforms. This plan included the raising of 8¾ milliards of francs by new taxation, economies to a total of five milliards, the virtual abandonment of the compulsory forty-hour week, and the use of profits on revaluation of the gold reserves to reduce the advances of the Bank of France to the state. Thus once more the year evinced its characteristic of the dominance of political forces in financial affairs. (H. V. H.)

FINLAND. A seven-year defence programme, to cost £12 millions, introduced in March, was adopted in May by the Diet, an increase of twenty per cent in income-tax being imposed. As one consequence, members of the Diet of the Åland Islands were summoned to Helsingfors in October to discuss steps for their defence, including revision of the clause exempting the islanders from military service, a matter in which Sweden was also involved. In November the Foreign Minister, Dr. Rudolf Holsti (who had visited London in July on his way from the United States), resigned, giving reasons of health and finance, though it was rumoured that his friendships with Britain, France, and U.S.A. had been distasteful in Germany; he was succeeded by M. Eljas Erkko. The world's skiing championships were held at Lahti in February. On May 16 the twentieth anniversary of Finland's independence was celebrated at Helsingfors by a trooping of the colours. (H. Fw.)

Area and Population :
Area (including inland waters) 147,811 sq. miles.
Population (est. Dec. 31, 1936) 3,807,163.
Chief Towns (pop. est. Dec. 31, 1936): Helsingfors (283,598), Viipuri (73,227), Turku (70,688), Tampere (61,208).
President. Kyösti Kallio.
Language. Finnish (10 per cent Swedish).
Religion. Lutheran Christian.
Production, 1937 :

Wheat	172,000	metric tons
Barley	174,000	,, ,,
Oats	670,000	,, ,,
Rye	414,000	,, ,,
Potatoes	1,338,000	,, ,,
Butter (1936)	27,800	,, ,,
Cattle (number, 1936)	1,526,764	
Sheep ,, ,,	820,289	
Wood pulp	2,131,000	metric tons
Copper	10,400	,, ,,



Fox Photos]
STADIUM AT HELSINGFORS, BUILT FOR 1940 OLYMPIC GAMES

Industry :
Number of Factories (1936) 4,078; employees 184,411
Index of Employment (average 1937: 1929 = 100) 108·8
,, ,, ,, (,, July, 1938: ,,) 109·8
Applicants for work (average 1937) . . . 3,763
,, ,, ,, (,, July, 1938) . . 2,186

Overseas Trade, 1937, merchandise :

Imports	9,123,300,000 markka
Exports	9,367,800,000 ,,

Communications, 1937 :

Roads, state	11,600 miles
Railways, state	2,130 miles
Shipping (June 30, 1938)	579,600 gross tons

Finance and Banking :

Revenue, ordinary (est. 1938)	4,131,600,000 markka
Expenditure, ,, ,,	4,235,300,000 ,,
Public Debt, total (Jan. 1, 1937)	4,399,500,000 ,,
Note Circulation (Sept. 30, 1938)	2,166,000,000 ,,
Gold Reserve ,, ,,	620,000,000 ,,
Exchange Rate (average 1937)	226·3 markka = £1 stg.
,, ,, (Nov. 26, 1938)	226½–227 markka = £1 stg.

Education 1935–36 :
Elementary: schools, 11,485; scholars, 396,969.
Secondary: ,, 217; ,, 50,276.

Miscellaneous :
Motor vehicles licensed (Aug. 31, 1937) 24,371 cars, 18,810 commercial vehicles, 6,030 motor-cycles.
Wireless receiving set licences (Oct. 31, 1936) 191,000

FINNISH LITERATURE. Of living authors mentioned in the *Ency. Brit.* (vol. 9, p. 256), only very few have contributed to the literary output of 1938. In Finnish prose the younger authors are now predominating, with names that were scarcely known a few years ago. Most important in this generation is Toivo Pekkanen (*b.* 1902), who has published a fine collection of stories, *Levottomuus* ("Unrest"). Olavi Paavolainen (*b.* 1903) has published a collection of essays, *Risto ja hakaristi* ("The Cross and the Swastika"), which contains studies of modern Germany and of ancient South America. His work is on the borderline between literature and journalism, but as journalism it is brilliant.

Of the older poets Otto Manninen has published a new volume, *Matkamies* ("The Traveller"), which will for ever maintain its place among the great books of Finnish poetry, An eminent critic, Lauri Viljanen (*b.* 1900), has with his poems, *Näköala vuorelta* ("Views from the mountain"), conquered a place among the foremost of the poets in Finnish. Mr. Viljanen had in 1936 published a volume of essays, the

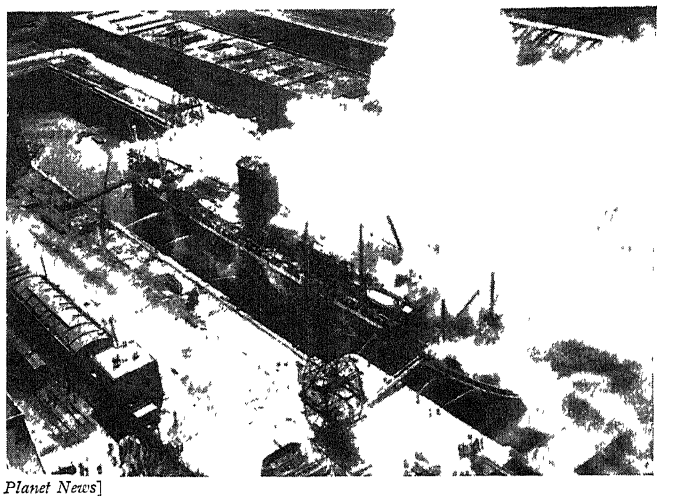
title of which, *Taisteleva humanismi* ("Humanism in Battle"), was a programme, and in 1935 he wrote a book on the poet V. A Koskenniemi A book which will probably live long is the *Kootut Runot* ("Collected Poems") of Saima Harmaja It contains the published posthumous poems of a young girl who in 1937 died of tuberculosis at the age of twenty-four She was a precocious, highly gifted poet, who fulfilled in rich measure the promises she had given when publishing her first volume at the age of nineteen.

Books in Swedish. Among poets writing in Swedish are to be mentioned Elmer Diktonius (*b* 1896), who this year has published his sixth volume of poems *Jordisk ömhet* ("Earthly Tenderness"), and Emil Zilliacus, whose book has the title of *Vandringen* ("The Excursion"). The form is as perfect as in the earlier poems of Zilliacus, and the content expressed is characterized by the same high seriousness Among Swedish prose books, Mrs Ester Ståhlberg's (*b.* 1870) *Mathilda Wredes testamente* ("The Testament of Mathilda Wrede") ought to interest readers outside Finland The book describes, in the form of a novel, the evolution which led Mathilda Wrede, the friend and protectress of prisoners, to adopt the humanitarian life-work which has made her famous Stress is laid on the influence exercised on her by English preachers and moralists Dr. Hans Ruin (*b.* 1891), the author of a profound book on the mysticism of poetry (1935), published in 1938 a collection of essays with the title *Val mött, Europa* ("A Salute to Europe"). The book contains, among other things, a brilliant description of the P.E.N. congress at Buenos Aires (Y. H.)

FIRE INSURANCE. In spite of the unsettled state of the political arena, 1938 was generally satisfactory for the fire insurance companies Apart from those due to warlike operations in Spain and China the most disastrous fires during the year were one at Los Angeles, California, in November, destroying a hotel and a large number of dwellings, one at an electrical engineer's store at Witton, with £560,000 damage, and one which commenced in a large department store in Marseilles, France, on Oct. 28–29, spreading to a large hotel and several surrounding buildings, the total damage there being in the region of £300,000.

Certain classes of property are notoriously liable to fire losses, as for example, country mansions in the United Kingdom. Fires such as those referred to attract the attention of the public. It is not the spectacular fires, however, that are responsible for the major portion of the insurance companies' claims. The United States Board of Fire Underwriters publishes an annual survey of fires in the United States, which provides much useful information. The report for the year 1937 shows that 620,000 fires occurred, involving a total of about £54 millions. Of these, 379,000 fires causing damage of £18,500,000, an average of £49 per fire, were in respect of private dwellings. Saw-mills and other woodworkers' premises on the other hand, accounted for only £1 million, that is, an average of £625 per fire for the 1,600 fires concerned.

Fire waste is a serious drain on a country's resources, being a direct destruction of the nation's wealth. With a view to reducing this waste, the Fire Brigades Act, 1938, was passed in Great Britain during the year, with the object of consolidating the fire brigade service and ensuring that local authorities for every district should provide efficient brigade protection. In the past, many districts had relied upon volunteer brigades, some of which reached quite a high level of efficiency.



Planet News]
THE FRENCH LINER, "LAFAYETTE", BURNING AT LE HAVRE, MAY 5, 1938, AFTER HER OIL TANKS HAD CAUGHT FIRE

The average annual fire loss per head varies in different countries, being dependent upon many factors. In the United Kingdom, where buildings are mostly of brick or stone with slated or tiled roofs, and few populous districts have been without the protection of some trained fire brigade, the average loss per head of the population for a number of years has approximated 4*s.* per annum. In the United States of America, timber enters more into the external construction of many buildings, especially in the country districts, and in those districts, too, fire brigade protection is not so generally available. These facts are reflected in the annual loss ratio in that country of about 8*s.* 6*d.* per head per annum

Legislation was introduced in various countries during the year to regulate and control in one way or another the operations of the insurance companies. No objection can be taken to any government endeavouring to protect the interests of its own subjects, and in fact any measure which results in the real protection of the insured is welcomed by the majority of the companies. It is, however, becoming increasingly the practice of governments to require deposits to be lodged for the benefit of policy holders in the country concerned, and whilst this undoubtedly results in the exclusion of companies of insufficient capital, the same effect could be obtained in other ways. The deposits themselves, representing a very small proportion of a company's liabilities, would have little material effect in case of insolvency due to abnormal losses or inefficient underwriting. One serious loss might exceed the deposits of many companies, and the tying up of funds in this way, restricting the company from obtaining the full advantage of its reserves where they may be required, may tend to have an embarrassing effect quite different from that intended, which might not be apparent from the published accounts and thus defeat its own ends. (S. A. M.)

FIRESTONE, HARVEY SAMUEL, American industrialist, was born in Ohio on Dec. 21, 1868, and died at Miami, Florida, on Feb. 7, 1938. In 1896 he founded the Firestone Rubber Company in Chicago, and, after the advent of the motor-car, established at Akron in 1900 the Firestone Tyre & Rubber Company, of which he was president from 1902 to 1932 Many other rubber articles besides tyres were manufactured by this company. Firestone took a leading part in the organization and financing of rubber plantations in South America, the Philippines, and Liberia. He was the author of *Rubber, Its History*

and Development, 1922, and (with Samuel Crowther) *Men and Rubber*, 1926.

FISHERIES. The fisheries of the world, according to the latest tabulations compiled by the United States Bureau of Fisheries, annually yield about 16,800,000 tons of 2,000 lb. each, of food or products used in the arts and industries, with a value of about £148,800,000. Of this amount, the fisheries conducted in the north Atlantic area by bordering countries produce about 7,300,000 tons, valued at £76,600,000, with the production by eastern north Atlantic countries amounting to 5,900,000 tons, valued at £64,000,000 and by western north Atlantic countries to 1,400,000 tons, valued at £12,000,000.

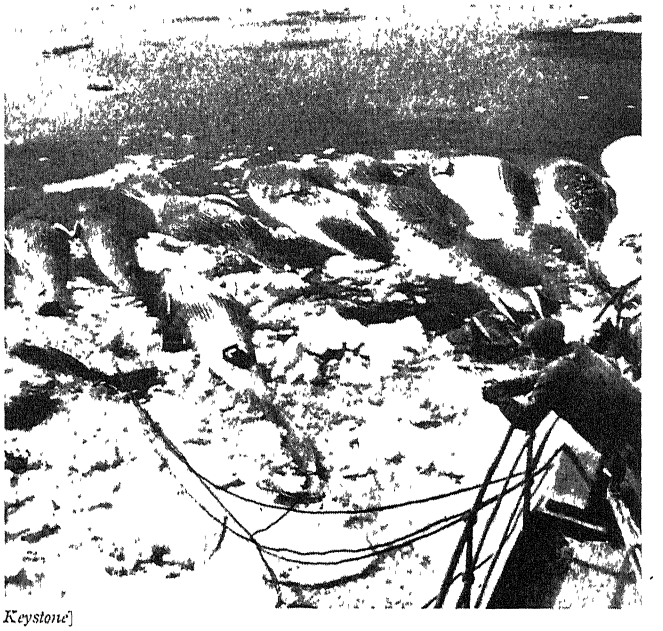
The species of importance taken in the north Atlantic area are herring, cod, haddock, mackerel, halibut, swordfish, crabs, shrimp, and oysters. During 1938, a fishery for tuna, of various kinds, was begun in a commercial way off the north Atlantic coast of the United States. As in 1937, when a convention was signed on behalf of the governments of Belgium, Denmark, Germany, Great Britain, Iceland, the Irish Free State, the Netherlands, Norway, Poland, and Sweden, the decline in certain species through over-fishing and other causes is causing concern This convention, among other things, regulates the size of the meshes of otter trawls and seine nets fished from vessels of the signatory countries in certain waters of the eastern Atlantic. It is hoped that through regulations under this convention, which are under consideration by some of the signatory powers, the fish population on the grounds of the eastern North Atlantic, especially in the North Sea, will be replenished.

Great Britain. In Great Britain the plight of the herring industry was a major issue in the Fisheries industry. The report of the Herring Industry Board for the year ended March 31, 1938, pointed out that trading conditions were even less favourable than in the two previous years. The total catch in 1937 was 1,511,610 crans, compared with 1,533,526 in 1936; but even more serious was a reduction in value of 9 per cent. Exports to European countries have dropped from 1,100,000 bbls. to 540,000, and the report states that "There are no grounds for expecting the recovery of a trade in herrings even comparable in amount with that of former days."

A bill to amend the Herring Industry Act of 1935, introduced on May 12, provided for the reconstruction of the Herring Industry Board on the termination of the office of the present Board next November, and a Herring Industry Advisory Council was set up.

North America. On the western north Atlantic, depleted stocks have also caused concern. Fishing vessels are obliged to travel farther from the home port, and large and more modern vessels of the otter trawl type are being constructed. In an effort to replenish the haddock fisheries, especially on Georges Bank, many of the trawlers fishing for haddock and cod are now using the mesh of larger size. The North American Council on Fishery Investigations hopes that this voluntary compact on the part of the industry will be made permanent by some form of international agreement between the countries prosecuting the haddock fishery of the western north Atlantic.

In Newfoundland, the plight of the fishers was given further study in 1938, and measures were promulgated to improve their welfare. This consisted mainly of government provision for outfitting the fishermen and in taking steps to improve methods for the curing and marketing of fish Some inducements also were made by Newfoundland to attract fishery concerns from the United States to conduct operations on the Treaty coast.



Keystone]
A CATCH OF WHALES AT THE STERN OF A FACTORY SHIP

In the Maritime Provinces of Canada, further progress was made during 1938 in the formation and operation of co-operative associations of fishermen.

Whaling. Norway and Great Britain are the two nations most vigorously prosecuting the whale fisheries. Operations have centred almost entirely in the Antarctic, where the take in recent years has been enormous; for instance, during the period from the season of 1919–20 to the 1936–37 season, inclusive, 337,313 whales were captured in the Antarctic, from which 26,580,796 bbls. of oil have been produced, according to Reports X (1937) and XI (1938) of the Committee for Whaling Statistics, Oslo. One barrel of about 50 gal equals one-sixth ton. One ton equals 1,016 kg. or 2,240 lb. From the same reports we find that during the 1936–37 season alone 34,579 whales were captured in the Antarctic fishery, from which 2,658,108 bbls. of oil were produced. Norwegian whaling accounted for 15,039 whales, with an oil production of 1,158,665 bbls.; British whaling accounted for 12,361 whales, with an oil production of 977,822 bbls.; and the whaling of other countries in this area accounted for 7,179 whales, with an oil production of 521,621 bbls. During this season, 9,321 men took part in the Antarctic whale fishery, of whom 7,678 were Norwegians, 837 Japanese, 454 British, and 255 German.

In view of this intensive prosecution, protective measures against extermination were taken at the International Convention between 26 powers which became effective in 1935. An international agreement for the further regulation of whaling was signed in London on June 8, 1937, on behalf of the Argentine Republic, Commonwealth of Australia, Germany, the Irish Free State, New Zealand, Norway, the Union of South Africa, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. This is now in force. This agreement was further amended to restrict whaling, at a meeting in London on June 24, 1938. At this time a protocol was adopted to the London agreement by twelve signatory powers. This is not yet in effect.

and Development, 1922, and (with Samuel Crowther) *Men and Rubber*, 1926.

FISHERIES. The fisheries of the world, according to the latest tabulations compiled by the United States Bureau of Fisheries, annually yield about 16,800,000 tons of 2,000 lb. each, of food or products used in the arts and industries, with a value of about £118,800,000. Of this amount, the fisheries conducted in the north Atlantic area by bordering countries produce about 7,300,000 tons, valued at £76,000,000, with the production by eastern north Atlantic countries amounting to 5,900,000 tons, valued at £64,000,000 and by western north Atlantic countries to 1,400,000 tons, valued at £12,000,000.

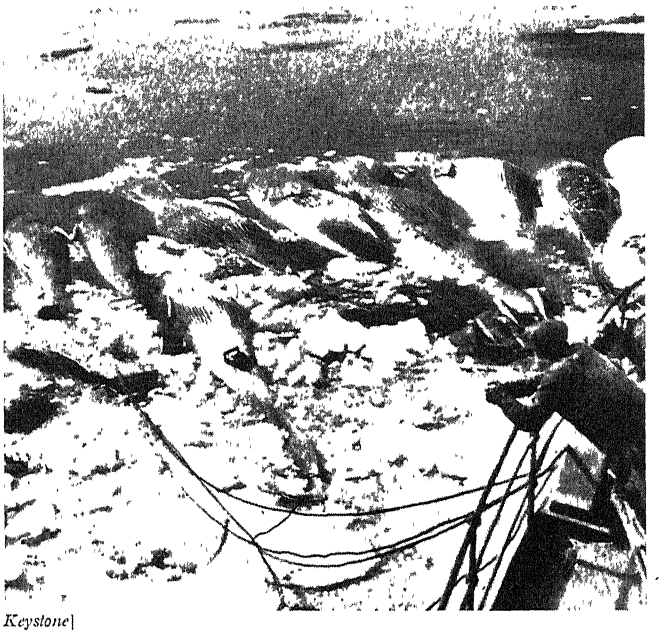
The species of importance taken in the north Atlantic area are herring, cod, haddock, mackerel, halibut, swordfish, crabs, shrimp, and oysters. During 1938, a fishery for tuna, of various kinds, was begun in a commercial way off the north Atlantic coast of the United States. As in 1937, when a convention was signed on behalf of the governments of Belgium, Denmark, Germany, Great Britain, Iceland, the Irish Free State, the Netherlands, Norway, Poland, and Sweden, the decline in certain species through over-fishing and other causes is causing concern. This convention, among other things, regulates the size of the meshes of otter trawls and seine nets fished from vessels of the signatory countries in certain waters of the eastern Atlantic. It is hoped that through regulations under this convention, which are under consideration by some of the signatory powers, the fish population on the grounds of the eastern North Atlantic, especially in the North Sea, will be replenished.

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North America. On the western north Atlantic, depleted stocks have also caused concern. Fishing vessels are obliged to travel farther from the home port, and large and more modern vessels of the otter trawl type are being constructed. In an effort to replenish the haddock fisheries, especially on Georges Bank, many of the trawlers fishing for haddock and cod are now using the mesh of larger size. The North American Council on Fishery Investigations hopes that this voluntary compact on the part of the industry will be made permanent by some form of international agreement between the countries prosecuting the haddock fishery of the western north Atlantic.

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Keystone

A CATCH OF WHALES AT THE STERN OF A FACTORY SHIP

In the Maritime Provinces of Canada, further progress was made during 1938 in the formation and operation of co-operative associations of fishermen.

Whaling. Norway and Great Britain are the two nations most vigorously prosecuting the whale fisheries. Operations have centred almost entirely in the Antarctic, where the take in recent years has been enormous, for instance, during the period from the season of 1919–20 to the 1936–37 season, inclusive, 337,313 whales were captured in the Antarctic, from which 26,580,796 bbls. of oil have been produced, according to Reports X (1937) and XI (1938) of the Committee for Whaling Statistics, Oslo. One barrel of about 50 gal. equals one-sixth ton. One ton equals 1,016 kg. or 2,240 lb. From the same reports we find that during the 1936–37 season alone 34,579 whales were captured in the Antarctic fishery, from which 2,658,108 bbls. of oil were produced. Norwegian whaling accounted for 15,039 whales, with an oil production of 1,158,665 bbls.; British whaling accounted for 12,361 whales, with an oil production of 977,822 bbls.; and the whaling of other countries in this area accounted for 7,179 whales, with an oil production of 521,621 bbls. During this season, 9,321 men took part in the Antarctic whale fishery, of whom 7,678 were Norwegians, 837 Japanese, 454 British, and 255 German.

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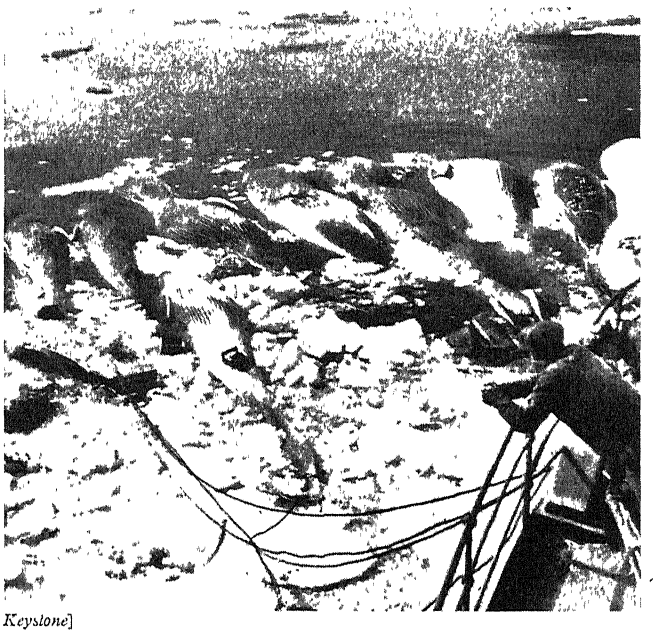
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FLAX AND LINEN. Nineteen hundred and thirty-eight was a difficult year which witnessed further changes in the linen map of Europe and a marked decline in (fibre) flax growing in the U S S.R., Estonia, and Lithuania. The annexation of the Sudeten textile regions added considerably to the capacity of the German linen industry. Practically all the important flax spinning mills and linen weaving factories in Bohemia, with the exception of those in Dvur Kralové and Upice, were ceded to the Reich. Czechoslovakia thus lost most of the linen inheritance which she had gained twenty years before at the expense of the Austro-Hungarian dual monarchy Germany's internal consumption of flax has now attained considerable proportions due largely to her re-armament programme, and Greater Germany is a force to be reckoned with in the continental flax markets as the Reich, despite intensive efforts, is unable to grow sufficient flax at home to feed her own mills, let alone those in Sudetenland.

The scarcity and high prices of standard grades of flax and tow, consequent upon the Soviet policy of restricting fibre exports, caused grave concern to spinners during the year and also to weavers who found it difficult, if not impossible, to purchase yarns of consistent quality and strength. On the last working day of 1938, the Soviet Flax Monopoly announced that it had decided not to sell any scutched flax, dressed line, and Ralo or peasant tows from its 1938 crop. This decision will inevitably affect adversely the linen industry of every country by stimulating the prices of substitute flaxes and increasing the gap between competitive prices of linen and cotton materials.

The first real attempt to restore flax to the rotation of the British farmer, with Northern Ireland as an experimental base, was made in 1938 The Ulster government granted £150,000 (spread over three years) to stimulate home flax production, and efforts are also being made to encourage flax production in Kenya, Canada, and Australia. Further progress was made during 1938 in mechanizing growing and decortication, and soon medium- and low-grade flax will be spun in its natural (unretted) state, thus absolving the grower from the distasteful task of retting Belgium is now the foremost flax exporting nation, and Flemish fibre worth over £3 millions was exported in 1938.

Further progress was made in 1938 in designing improved linen machinery, the greatest success being achieved in the spinning section of the trade. The double-crank pushbar drawing system has been adopted as standard equipment in the tow department, and the principle is now being applied to line. Intensive efforts are being made to speed up the wet spinning frame, and interesting automatic-doffing flyer and wet ring frames have been evolved.

Remarkable linen tariff concessions were granted in 1938 by the U.S.A., the world's largest market for flax products. Following upon the United States–Czechoslovakian trade pact in April, the Anglo-American trade agreement which came into force on Jan. 1, 1939, drastically cut U.S.A. linen duties, particularly on the medium and finer qualities. In theory all linen-exporting countries (save Germany, Sudetenland, and Austria) will gain equally with the United Kingdom under the most favoured nation clause, but in practice Northern Ireland will benefit most as Ulster specializes in those better-grade fabrics on which the tariff reductions were heaviest. Thus rates on fine damasks were reduced by fifteen per cent, whilst coarse crashes, towellings, etc. benefited only by a meagre five per cent concession. U.S.A. linen consumption has been shrinking steadily for years past, due partially to the industrial depression allied with the growing popularity of rayon and staple fibre. This challenge was taken up by the (U.S.A.) Linen Trade Association which launched an ambitious campaign in August to make the public "linen conscious". Britain is linen exporter-in-chief to the transatlantic market and it is noteworthy that United States imports of British linen piece-goods dropped from £1,554,381 in 1937 to £681,077 in 1938. Exports from Belgium and other continental linen sources declined similarly. Exports of linen goods from the United Kingdom in 1938 (including a small percentage of soft hemp goods) totalled £5,480,274 as against £7,789,092 in 1937, due largely to poor purchasing on the part of U.S.A. and China China is normally a large purchaser of fine Ulster linen cambrics and sheers which she embroiders for the transatlantic market, but the Sino-Japanese dispute has put a brake on this triangular trading Furthermore, the metal duralumin and other light alloys are tending to supersede flax fabric as a wing material for aeroplanes. At the same time, most of the aeroplanes being constructed to-day for re-armament purposes still have their main planes, fuselages, and tail units covered with unbleached linen, and the control surfaces of many of the latest "all-metal" war aircraft are linen covered. (C. R. C.)

FLETCHER, CONSTANCE, novelist and dramatist, who wrote under the name of "George Fleming", was born in the U.S.A. in 1858, and died in Venice on June 6, 1938. Her novels included *A Nile Novel*, 1877; *Mirage*, 1878; *The Head of Medusa*, 1880; *Vestigia*, 1882; *Andromeda*, 1885, *The Truth about Clement Ker*, 1889; *For Plain Women Only*, 1895; and a collection of short stories, *Little Stories about Women*, 1897. Her work as a dramatist was represented by *Mrs Lessingham*, 1894; *The Canary*, 1899; and a dramatization of Kipling's *The Light that Failed*, 1903.

FLEURIAU, AIMÉ JOSEPH DE, French diplomatist, was born at La Rochelle on Jan 24, 1870, and died at Ismailia, Egypt, on Jan 19, 1938 He entered the French diplomatic service in 1895, was Minister in China, 1921–24, and as Ambassador in London, 1924–33, showed conspicuous tact at a time when Anglo-French relations were apt to become strained. He was created a G.C.V.O. in 1921, and a G.C.B. in 1933. He published in 1911 *L'Activité Réfléchie*.

FLOODS: *see* IRRIGATION AND FLOOD CONTROL.

FLOUR AND FLOUR MILLING. Generally speaking, during 1937 and 1938 flours of uniformly good quality have been the rule rather than the exception. Protein quality as well as quantity has been good, resulting in bread flour of broad fermentation tolerance, and more intelligent control of wheat as well as flour-blending operations has manifested itself in uniformity of quality characteristics, especially with regard to diastatic strength In many of the better mill laboratories, carefully controlled baking tests have supplemented the usual moisture, ash, and protein determinations, while an increasing number of mill chemists have adopted standards of diastatic power to round out their regulation of quality factors.

One of the most outstanding recent accomplishments of chemical research as applied to cereal products has been the development of molecular distillation of wheat germ oil for the purpose of separating its valuable vitamin constituent from the various glycerol esters, phosphatides, and other saponifiable matter of the crude wheat oil. This development presents great possibilities for the fractionation of other cereal oils into products of potential biological value.

Milling Practice. Air conditioning, a technology which was undoubtedly born in the milling industry, is becoming

recognized as a valuable asset to good mill control From the first break rolls through to the warehouse a careful control of humidity as well as of temperature is regarded as superior milling practice. To eliminate static electricity as a fire hazard, the maintenance of a relative humidity of above fifty degrees is a condition worth achieving it only for its safety value

Grain washing has come into its own in the better mills. As a means of securing a better temper as well as a cleaner break flour, washing has been a credit operation to those millers who practise it. But like the tempering process, if not an important conditioning function in itself, grain washing must be carefully controlled

In mill engineering the installation of successful battery rolls has aroused considerable interest and comment Milling units of medium size of from about 300 to 600 barrels daily capacity seem well suited to the battery arrangement. Satisfactory flexible couplings, together with better chain drives, have contributed to the success of multiple roll operation. With the elimination of much line shafting, pulleys, and belting, there are certain definite advantages, particularly the opportunity to set other machinery directly beneath the rolls, thus eliminating considerable spouting, saving space, and permitting a reduction in the amount of elevating equipment

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FLOWERS AND FLOWER FARMING: *see* HORTICULTURE.

FOOD AND DRUG LEGISLATION. The Food and Drugs Act, passed in July, 1938, was the outcome of a departmental committee set up by Mr. Greenwood, when Minister of Health in the Labour government of 1929–31; it is a consolidation Act, some 250 provisions contained in over 36 Acts dating from the reign of Henry VIII being replaced by this single measure of 103 sections, in which the very minimum of new matter is introduced.

Its range is extensive, dealing as it does with the preparation, advertising, and sale of food of all kinds—from bread and milk, artificial cream and ice-cream, to horseflesh and shell-fish—as well as with drugs; and of its new provisions the following are the most important in their bearing on the general public.

A new offence has been created in the *possession* of any food or drug to which a substance (including colourings, flavourings, condiments, etc.) that will render it injurious to health or will impair its quality has been added; previously the law limited the offence to the *sale* of such.

The proviso in the 1928 Act that a person should not be convicted if he did not know, and could not with reasonable diligence have ascertained, the condition of the food or drug has been omitted.

The power to make regulations to prescribe the composition of food, given by the Public Health Act, 1907, has been retained, and it is now made an offence to abstract any constituent of a food so as to affect it injuriously with intent to sell it in its altered form if it then infringes any regulations regarding its composition. No regulations have up to now been made in respect of ordinary foodstuffs, though for many years—under other Acts—standards have been in force for milk and milk products.

Additional safeguards are made compulsory in regard to the cleanliness and sanitation of factories, food-rooms, shops, etc., and local authorities are given increased power to control open-air markets and stalls; the manner of making regulations controlling dairies and milk-production has been simplified; the various Bread Acts, dating from 1832, have been codified, and now the mere *presence* in bakehouses or mills of prohibited substances (as apart from *use* or *sale*) is an offence; the licences of all slaughter-houses and knackers' yards are now granted annually, for one year only, and at the discretion of the local authorities, and, finally, it is provided that the food and drug authorities shall be, generally speaking, the county and borough councils (L. H. D.)

In the United States, the new Federal Food, Drug, and Cosmetics Act covers a wide field In its principal differences from the old law it brings all cosmetics except toilet soap under control, outlaws cosmetics which may be injurious to users except poisonous coal-tar hair dyes which bear warning labels, and prohibits false or misleading labelling It prohibits traffic in food which may be injurious to health; prohibits also the addition of poison to food except where such addition is required in the production thereof or cannot be avoided by good manufacturing practice, in which case tolerances are authorized limiting the amount to a point ensuring protection of public health It specifically requires label declaration of artificial colouring, artificial flavouring, and chemical preservatives in food but exempts butter, cheese, and ice-cream from this requirement in so far as artificial colouring is concerned It requires labelling of special dietary food to inform purchasers fully of its vitamin, mineral, and other dietary properties. It prohibits traffic in new drugs unless such drugs have been adequately tested to show that they are safe for use under the conditions prescribed in their labelling An exception is made of drugs intended solely for investigational use by qualified scientific experts.

The Act further requires the labelling of drugs and devices to bear warnings against probable misuse which may be dangerous to health. It requires that antiseptics possess germicidal power; that the labels of non-official drugs list the names of the active ingredients, and in addition show the quantity or proportion of certain specified substances. It also proscribes the use of containers for food, drugs, and cosmetics which may render the contents injurious to health.

FOOD PRICES: *see* PRICES, STATISTICS OF.

FOOTBALL. Under this head are reviewed the most important forms of football as played in Europe and the American continent during 1938.

Rugby Union. The year 1938 saw the death of some very famous Rugby Union football players. Canon R. D. Budworth (Oxford and England), Dr. F. E. Chapman (Durham and England), J. E. Crabbie (Oxford and Scotland), and C. P. Wilson (Cambridge and England) are just some of them.

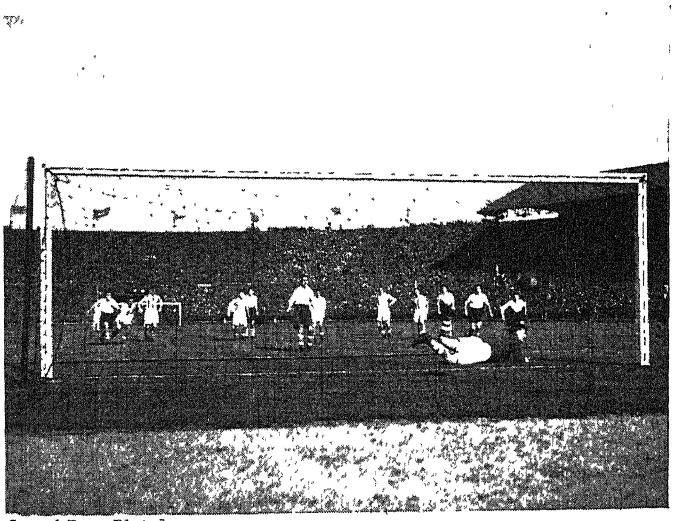
To most people's surprise, and especially that of Scottish folk, Scotland won the international championship in 1938, and won it gloriously, scoring 52 points as against 36, and winning all three matches. When the Scottish side to play Wales at Edinburgh was announced (and the side remained practically unchanged all through the season), it was greeted in most circles as one of the weakest that had represented that country for years. R. W. Shaw was captain, and the selectors decided to play him at outside half. Now for years Scotland had been divided into two Rugby camps—those who thought Shaw an ideal outside half, and those who considered him a bad player in that position, though a good wing. The selectors were right,

for Shaw's brilliance more than anything else won Scotland the championship. A narrow and rather lucky win by eight points to six enabled them to beat Wales. Then came a much more comfortable win over Ireland by twenty-three points to fourteen, and the stage was now set for the Calcutta Cup match against England at Twickenham Not for years has such beautiful football been played in this (or any other) match as Scotland played that day. Those who saw it will for certain cherish the memory of it Shaw was superb, and the delightful try that he scored " on his own " in the last few minutes was a fitting conclusion to a real " Shaw " season The score was 21 points to 16, though in fairness to Scotland it ought to be stated that they scored five tries to England's one Others who contributed substantially to Scotland's success were R C. S Dick, J. G S Forrest, and D J Macrae (all three-quarters), and Sub-Lieut W. H Crawford, a magnificent place-kick.

Wales, a disappointing side, came next to Scotland in the international table. They beat England in the opening match, but, by a mixture of bad play and bad luck, lost to Scotland, and that lost them the championship. Cliff Jones captained the side, without ever being at his real best, whilst Wilfred Wooller, who played in the second and third matches, was never anything but a shadow of his great self. The English side was a poor one The backs were dull and slow, the great weakness being at outside half and centre three-quarter. But one of the matches was an extraordinary one—that against Ireland at Dublin England won by 36 points to 14, G. W. Parker, the full back, kicking seven goals (six conversions and a penalty). England were leading by 23 points to nil at half-time, having made full use of the gale of wind they had behind them. Ireland managed to score four tries in the second half. Probably the best players on the England side through the season were J. L. Giles, the scrum half, and R. M. Marshall and H. B. Toft, two forwards. Ireland had a poor side, too, though the display of some new men against Wales at the end of the season was reassuring H. R. McKibben and J. D. Torrens showed great promise in the centre, but F. G. Moran (a superb wing three-quarter), G. J. Morgan, the scrum-half, and S. Walker were generally the mainstays of the team.

A party of 29 players, with Major B. C. Hartley as hon. manager, toured South Africa in the summer. Twenty-three matches were played, including three " Tests ". The first two " Tests " were lost, so that South Africa won the rubber, but the tourists put up a brilliant performance in the final Test at Capetown, when they won by 21 points. As usual, the British side was not thoroughly representative, famous players like R. W. Shaw, R. C. S. Dick, J. G. S. Forrest, H B Toft, W. H. Crawford, and F. G. Moran being unable to make the journey owing to business reasons. Under these circumstances, and considering how hard hit the side was by injuries and sickness, to lose only eight matches out of 23 was not at all bad. More important still, the team created a splendid impression by the open and sporting nature of the football they played. S. Walker (Ireland) was captain, and among those who played excellently all through the tour were J. L. Giles (England), C. F. Grieve (Scotland), H. Tanner (Wales), W. H. Travers (Wales), and G. E. Cromey (Ireland).

The County Championship in 1938 was won by Lancashire, thanks mainly to the brilliance of the backs, with the J. Heaton-R. H. Guest wing always prominent, and to the good " hooking " of H. B. Toft. The Royal Navy won the Inter-Services Tournament, St. Mary's the Hospitals Cup (for the fifth year in succession), and the Metropolitan Police



Central Press Photos]

PRESTON NORTH END SCORE FROM A PENALTY TO WIN THE CUP FINAL *v* HUDDERSFIELD TOWN AT WEMBLEY, APRIL 30, 1938

the popular Seven-a-side Tournament held under the auspices of the Middlesex County R U Stewart's College F.P. won the Scottish Club Championship, and University College, Dublin, the Irish Club Championship. The University Match in December was won by Cambridge by a goal and a penalty goal (8 points) to two penalty goals (6 points). Both sides were rather below the average University strength, but a superiority in attacking ability behind the scrummage enabled Cambridge to win. J G. S. Forrest was instrumental in getting the only try, though it was R. B. Bruce Lockhart who actually scored it. The goals were kicked by K. I Geddes for Cambridge and I. H. Watts for Oxford.

Rugby League. This code was as popular as ever in the North of England. There are two main competitions, the Northern Rugby League Championship, and the Challenge Cup Competition ; and probably the outstanding performance was that by Barrow who, though they won neither competition, reached the semi-final of the first and the final of the second, more by intense local enthusiasm than by really marked skill. In the Rugby League Championship, the four teams at the top of the table at the end of the season play for the championship. Hunslet, Leeds, Swinton, and Barrow, in that order, headed the table. Hunslet beat Barrow (13–7) in one semi-final, and Leeds beat Swinton (5–2) in the other. In the final Hunslet beat Leeds (8–2). The final of the Challenge Cup Competition is always played at Wembley now, and it was Salford and Barrow who faced each other there last year. Salford were the outstanding team in the competition, and though Barrow made a grand fight of it, Salford were worthy winners of the final, even though the score was only seven points to four Salford had never won the Cup before, though they had figured in the final on four previous occasions.

In the International Championship, Wales won both her matches, beating England at Bradford by seven points to six, and France at Llanelly by 18 points to 2. It was a desperate affair at Paris between England and France, England just scraping home by 17 points to 15. Lancashire won the County Championship (thus completing a " double " with their Rugby Union side), beating Yorkshire and Cumberland fairly easily. Locally, the County Cup Competitions arouse tremendous enthusiasm, and in these Leeds beat Huddersfield for the Yorkshire Cup, and

Warrington beat Barrow for the Lancashire Cup, Salford having been unexpectedly beaten in the first round by Widnes. The attendance at Leeds for the Rugby League final, when Hunslet beat Leeds, was 54,000, the highest ever recorded for this event.

Association Football. The Football League celebrated its Jubilee in May 1938, when a banquet was held in London, the guests including H.R.H. the Duke of Gloucester and Lord Derby. Life membership of the League was conferred on Mr. C. E. Sutcliffe (president of the League) and on Mr. F. W. Rinder (the senior vice-president). At the central table sat representatives of the original clubs forming the League. It was reported at this function that the laws of Association football had been entirely redrafted and rewritten for the 1938-39 season. A very famous legislator died in 1938 Mr William Pickford. For over fifty years he had worked in the interests of the game, and had always been one of the game's leading reformers. He had succeeded the late Sir William Clegg as president of the Football Association, after having been a member of the Council since 1888. Mr. Pickford was a Hampshire man. Other men famous in the game who died in 1938 were Mr. Phil Bach and that prolific goal-scorer, Steve Bloomer.

The outstanding event of the year, the F.A. Cup Final, was won by Preston North End, but only after extra time had been played against Huddersfield Town. Mutch scored the winning goal from a penalty. There was a time when Preston looked like bringing off the "coveted double" the Cup and the League Championship. But in the end they had to be content with third place in the League table, three points behind the leaders. In the League Championships, Arsenal, Aston Villa, and Millwall headed the three Divisions, and everyone was delighted to see such a famous club as the Villa go back to its proper place in Division I. But, unfortunately, an equally famous club, West Bromwich Albion, was at the bottom of Division I; and the other club to be relegated, Manchester City, had headed the table the previous season! A new-comer to the League was Ipswich Town, who displaced Gillingham in the Third Division, Southern Section.

Celtic and the Heart of Midlothian were the two clubs at the top of Division I of the Scottish League, the Rangers coming next. In the Irish League Belfast Celtic and Derry City were bracketed top. The winners of the Scottish and Irish Cups were respectively East Fife and Belfast Celtic.

England won the international tournament, with two wins and one defeat (by Scotland at Wembley by one goal to nil). Of the international matches played in 1938, England beat France (4–2), Germany (6–3), Rest of Europe (3–0), and Norway (4–0), but lost to Switzerland (1–2); while Scotland beat Holland (3–1). The Scottish League beat the Football League. England won the Amateur International tournament, beating Scotland (5–2) and Wales (8–2), and drawing with Ireland (1–1). The F.A. Amateur Cup final was won by Bromley, who beat Erith and Belvedere by one goal to nil. The University match was won by Cambridge by 5 goals to 3, and the victory was contrary to all expectation. The match was played for the first time on a Saturday, and for the first time on an amateur club's ground—that of "Dulwich Hamlet". The scorers were E. S. Washington (2), L. D. Hollins, A. F. Lindley, and K. Goodyear for Cambridge, and H. S. Seaford (2) and R. J. Sturdy for Oxford. (D. R. G.)

American Football. The foremost teams of the season, as ranked in a nation-wide poll of sports writers, were Texas Christian University, Tennessee, and Duke, which went through its regular schedule without being scored against. Oklahoma, which also won all of its games, got a high rating, and so did Southern California, Notre Dame, Carnegie Tech, Pittsburgh, Holy Cross, Cornell, Minnesota, Michigan, and Alabama. Other strong elevens were California, Fordham, Tulane, Army, Dartmouth, Villanova, Santa Clara, St Mary's, Texas Tech, and Northwestern.

Southern California, beaten by Alabama at the start of the season and again by Washington, came back strong to win the Rose Bowl nomination, beating Duke by seven to three on Jan. 2 at Pasadena The Sugar Bowl game at New Orleans was won by Texas Christian University by fifteen to seven over Carnegie Tech. Tennessee and Oklahoma played in the Orange Bowl at Miami, the game going to Tennessee at seventeen to nil, and St. Mary's defeated Texas Tech in the Cotton Bowl at Dallas, twenty to thirteen.

Sectional honours went as follows: Carnegie Tech was rated the No. 1 team of the East; the Big Ten championship was won again by Minnesota; California and Southern California shared the Pacific Coast Conference title; Texas Christian won the Southwest Conference honours, and Tennessee the Southeastern crown; Duke regained the Southern Conference title, and Oklahoma won the Big Six championship for the first time. David O'Brien, who led T.C.U.'s running and passing attack, won the Heisman Memorial Trophy as the outstanding player of the year. The scoring averages for the season were higher than usual, probably owing in part to the two new changes in the rules: (1) eliminating the penalty for a pass into the end zone prior to fourth down, and (2) bringing the ball out fifteen instead of ten yards when it crosses the sideline between the goal lines.

Canada. In Canada many features of the U.S. game have been adopted, with great stress given to the forward pass in recent years. Kicking is of greater importance in the Dominion game, but it was the running attack of the Toronto Argonauts, led brilliantly by Buster Storey, which enabled them to defeat the Winnipeg Blue Bombers, thirty to seven, and retain the senior championship of the Canadian Rugby Union. The Argonauts defeated the Sarnia Imperials to win the championship of the East; and the Blue Bombers beat the Regina Roughriders and the Calgary Bronks to qualify as the Western representatives in the Dominion final. McGill, for the first time in ten years, won the championship of the Canadian Inter-collegiate Rugby Football Union.

FOOTBALL POOLS. The legal position of football pool betting, which was removed from the scope of the Betting and Lotteries Act, 1934, by the Lords before the Commons had had an opportunity of debating it, was unchanged during 1938, questions in the House (Feb 10, *et seqq.*, and Nov. 1) being answered to the effect that, though the promoters' profit might, as stated, amount to £2 millions per annum at no risk to themselves, the Treasury was well satisfied with the income that accrued to it from these profits and, further, that it was impracticable to separate the question of pool betting from that of the off-the-course betting as a whole.

This attitude of the government was strongly criticized by the Churches generally and by many bodies of social workers as also by traders, owing to the diversion of such large "legitimate" business; but from the narrow financial aspect there is much to justify it. An investigation conducted by the British Institute of Public Opinion in the autumn went to show that 47 per cent of the population of Britain engaged in the pools, and the estimate that £50

millions (as against some £8 millions in the first year) is "invested" is probably near the mark. Taking the 6*d.* pools only, and assuming that all promoters retain only twenty per cent for expenses, etc, then, of each £100 "invested", each attempt being enclosed in a separate envelope, the Post Office takes no less than £29 8*s.*, the actual sum "invested" being £56 10*s.*, £14 2*s.* being the promoters' share. These proportions, naturally, cannot be applied to the whole £50 millions; but the figures do show that the government's "rake-off" is considerable, and, incidentally, that the "investor" of a single 6*d.* pays 8½*d.* for an "investment" of something under 5*d.* On this point it might further be noted that some coupons can be filled up in 14,000,000 ways, and that in a recent investigation extending over fifteen weeks, it was found that only 25 completely correct forecasts were given in 330,000,000 attempts.

From the following table, showing the sales of postal orders for 6*d.*, 1*s*, and 2*s.* 6*d.* during the years ending March 31, 1930 (in the pre-pool era) and the past four years, it will be seen that the slight drop in the sixpennies during 1937—due, probably, to an increase in the unit of "investments"—has been well made up, while the rise in both of the higher values is remarkable

Year ending March 31	Postal Orders		
	6*d.*	1*s.*	2*s* 6*d.*
	£	£	£
1930	20,797,000	13,024,000	11,804,000
1935	22,924,000	35,959,000	20,883,000
1936	31,804,000	46,488,000	26,201,000
1937	30,586,000	48,826,000	29,143,000
1938	32,913,000	58,867,000	35,252,000

During the year many cases arising from the pool betting business reached the law courts, a number of them on account of ingenious but fraudulent attempts to extract money from the promoters; and in May Mr. Justice Atkinson, in trying the claim (unsuccessful) of an "investor" against a promoter who denied having received the coupon, laid it down that there were no legal obligations either way, adding that the business could not be conducted except on the basis that everybody was trusting, and took the risk of accidents. (L. H. D.)

FORAGE CROPS. The prolonged drought in the first half of 1938 greatly reduced the hay crop in Great Britain In some districts however, where no first cut had been worth while, a good aftermath was gathered. The total output in recent years has been:

Great Britain

	Acreage 000 acres	Yield per acre cwt.	Production 000 tons
Seeds Hay:			
1927–36	1,883	27·8	2,624
1937	1,878	30·3	2,846
1938	1,571	24·4	1,913
Meadow Hay:			
1927–36	4,833	19·9	4,807
1937	4,859	21·6	5,248
1938	4,402	15·0	3,289

The application of lime and basic slag under the Land Fertility Scheme (*see* AGRICULTURE) is beginning to have noticeably beneficial effects. In another direction Prof. Stapledon's researches show what enormous potentialities there may be for improving the yield of grassland by seed selection and skilful management of the sward. Also, the development of grass drying has again attracted much public interest during the year. Drying outfits are becoming progressively cheaper and more efficient. Dried young grass of good quality may form a valuable concentrated food for livestock, and may compete in price with imported concentrates

In Germany hay crops were rather above the 1932–37 average and the lucerne harvest exceptionally good—thirty per cent above average. In order to develop the supply of home-grown feedingstuffs Germany has also greatly increased the area under green maize and under sweet lupins. A particularly interesting development is the widespread adoption of a winter green crop, sown immediately after the corn harvest and cut just before the potatoes are planted in May In this way a considerable acreage is made to yield two harvests instead of one. At the same time subsidies are being given for the erection of silos, both for green crops and for potatoes, for the ploughing up of pasture and for the fencing off of large meadows into small paddocks for rotational grazing.

In France the second hay crop was good though the first extremely poor. Italy also suffered from the spring drought In Canada the production of lucerne was slightly less good than in 1937, but still above the five-year average. The United States hay crop was even better than 1937 and twenty per cent above average. In the Argentine fodder crops were damaged by locusts but pastures improved during the latter months as the result of abundant rains. Both in Australia and New Zealand spring rain fell in October and November, giving a good growth of grass. (P. L. Y.)

FOREIGN MISSIONS, RELIGIOUS: For information on this subject, *see* the following articles: ANGLICAN COMMUNION, THE; BAPTIST CHURCH, THE; CONGREGATIONAL CHURCHES; METHODIST CHURCH, THE; ROMAN CATHOLIC CHURCH; and FRIENDS, THE SOCIETY OF.

FORESTRY AND REFORESTATION. Special mention may be made this year of two subjects of outstanding importance: (1) the world's future timber supplies, and (2) protective forestry.

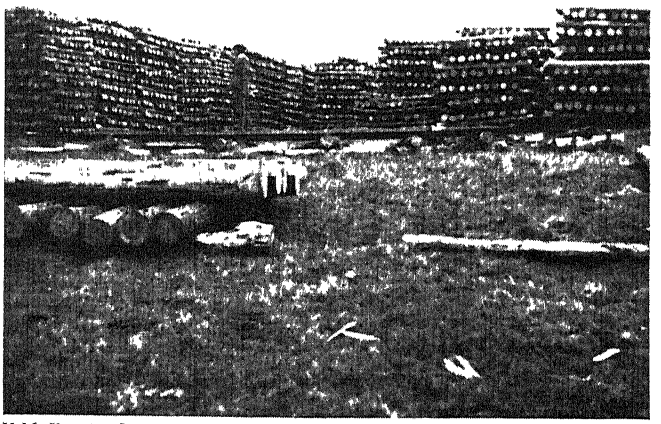
Future Timber Supplies. The world's timber supplies are known to be diminishing rapidly. It has been estimated that the total consumption of wood is fifty per cent greater than the annual growth; and if this is correct a serious shortage of timber may be expected at no distant date. This applies more particularly to softwoods, which supply about eighty per cent of the world's requirements in sawn timber, and provide the raw material for the manufacture of wood-pulp. In the event of such a shortage, those countries which import more timber than they export will be the greatest sufferers, as their wood-using industries will be seriously affected, particularly since exporting countries are tending more and more to convert their timber into manufactured products before export. It is therefore important that every timber-importing country should aim at increasing its production of home-grown timber to the utmost. This can be done both by afforestation (usually a somewhat tardy process) and by bringing existing forests into the highest state of productivity. In the case of State-owned forests, this usually presents no great difficulty. But in most European countries more than half the forest area is privately owned, and it has been found that the out-turn from private forests is generally low unless laws are in force requiring their proper management. Such laws have long been in operation in some

countries, including Norway, Sweden, Finland, Denmark, Austria, and Czechoslovakia. Other countries are realizing that means must be found for increasing the out-turn from their private forests. Laws strengthening the measures of control under previous laws have recently been passed in Italy (1926), Finland (1928), Norway (1932), and Denmark (1935). Important developments are taking place in Germany, where forest administration, formerly the concern of each individual State, has been centralized in Berlin. A law against forest devastation, applying to private forests, was passed in 1934, and further legislation, imposing stricter control over private forestry, is expected. In spite of a forest area amounting to about 24 per cent of the total area of the country, Germany is not self-supporting in timber, and in the past has imported largely from Austria, Poland, and other countries with exportable surpluses. The incorporation of Austria and parts of Czechoslovakia has added important forest areas to the German Reich, but in spite of this, Germany will still be unable to meet all her timber requirements from internal sources.

In the matter of future timber supplies Great Britain is in a particularly bad position, since over 95 per cent of her requirements are met from imported timber. A large scheme of land acquisition and afforestation by the State has been in operation since 1920, but in spite of this, about 80 per cent of the total woodland area is still in private ownership. Private forests, therefore, must play an important part in any scheme for increasing the country's supplies of home-grown timber. There is no State control over private forests, though assistance is given in the form of planting subsidies. The question of adopting effective measures for improving the condition of private forestry is now being considered.

In order to make good the future deficiency in the world's timber supplies, attention is beginning to be directed towards the possibility of developing the extensive forests of the tropics. In their original condition the productivity of these forests is comparatively low, since they consist as a rule of a large number of different species, of which only a few have any market value. But by suitable choice of species and cultural treatment it is possible to secure out-turns in excess of anything obtained from the forests of temperate countries. There are various fast-growing tropical trees which, if grown intensively, would produce high yields of woods that may prove to be useful substitutes for coniferous timber and pulpwood. At present the cost of exploitation and transport precludes any important developments in this direction, but if prices rise appreciably in consequence of the increasing scarcity of timber, it may yet prove profitable to grow plantations of fast-growing tropical trees on a large scale and to develop communications with a view to bringing the produce to the world's markets at a reasonable cost.

Protective Forestry. The disastrous results of destroying forest and other natural vegetation have long been known, but it is only within recent times that the full extent of the damage has been realized. The effects produced by destroying the natural vegetation include the lowering of atmospheric humidity, exposure to dry winds, increased evaporation, the release of wind-blown sands, the removal of fertile soil by erosion, interference with the water-supply, and the general desiccation and impoverishment of the country. The soil brought down from denuded hills is deposited in the rivers below, silting up their beds and causing disastrous floods. The process is greatly aggravated by unrestricted grazing, while in tropical countries



H.M. Forestry Commission]

DEPOT AT INVERLIEVER, ARGYLLSHIRE, FOR PIT-PROPS FROM THINNINGS FROM THE FORESTRY COMMISSION'S PLANTATIONS

shifting cultivation is sometimes a contributory cause of erosion and desiccation. In recent years this problem has forced itself on the attention of many countries, and endeavours are being made to deal with it.

In most European countries legislation has long been in force controlling the clearing of forests in mountainous regions and providing for the afforestation of denuded slopes. More recent legislation includes the Italian Forest Code of 1923, which inaugurated a great scheme of protective work, the Swedish Law of 1923 concerning "protection forests", and the Norwegian Forest Protection Law of 1932. In the mountainous parts of Japan extensive afforestation has been carried out for more than two centuries, and systematic torrent-training works were begun about 1880. The Forest Law of 1897 made this work compulsory in every part of the country. In the United States the magnitude of the erosion problem in the western plains region has necessitated the formation of a special Soil Conservation Service.

In many parts of the British Empire measures are being taken to counteract erosion. In the Union of South Africa the question was investigated some years ago by a Drought Investigation Commission, which issued its final report in 1923. As a result, some progress has been made in erosion control. In Australia two recent reports, one for Victoria and the other for South Australia, have made recommendations for counteracting the widespread loss by erosion and soil-drift due to the destruction of the natural cover through overstocking, by rabbits, and by the cultivation of light sandy soils. In India large-scale ravine reclamation work, including afforestation, has been carried out for many years in the dry parts of the United Provinces and has been undertaken more recently in the Punjab foothills. In the Colonial Dependencies considerable attention has been given in recent years to the question of soil erosion and protective forestry. In Northern Nigeria extensive areas have been reserved as protection forests, while an Anglo-French Commission has investigated the causes of erosion and desiccation on either side of the international boundary. In the Gold Coast progress has been made with forest conservation to protect the cocoa plantations and the headwaters of streams. In Kenya a special soil conservation

service has been formed, and works of afforestation have been put in hand, while de-stocking is being carried out in some of the badly eroded areas In Uganda the question of soil erosion and water-supplies has recently been the subject of a special report, which recommended further protective forest reservation. In Nyasaland, where much damage has been done by shifting cultivation, a soil conservation officer has been appointed to undertake and co-ordinate reclamation work

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North America. In Canada forestry is one of the directions in which efforts are being made to train unemployed youths, camps having been established in various Provinces where instruction is given in conservation, clearing of undergrowth, and other branches of the industry

Tree planting is being undertaken as part of the programme to be carried out under the Prairie Farm Rehabilitation Act, with a view to improving prevailing conditions in certain areas and providing protection against the erosive and drying effects of high winds

Apart from this, the long-term policy of tree-planting on the prairies is being continued under government auspices from the forest nursery stations of the Dominion Experimental Farms at Indian Head and Sutherland, in Saskatchewan This has now been carried on for 37 years, during which period over 153 million tree seedlings and cuttings have been distributed to between 60,000 and 65,000 farmers. In the spring of 1938, 6 million seedlings and cuttings and 25,000 evergreen trees were shipped from Indian Head to Saskatchewan farmers.

As an example of afforestation work on the part of the Provincial governments during 1938, the planting of 500,000 trees on 185 acres of government-owned land adjoining the Spruce Lake forest reserve, near Brandon, was completed by the Manitoba Forestry Branch. The British Columbia government has an extensive reafforestation programme in hand, and during the year 3 million seedling trees were being prepared at the Green Timbers forestry station, near New Westminster, for planting on an area of 3,000 acres on Vancouver Island.

The loss by fire, insects, fungi, etc., continues to be high. The heaviest loss during 1938 was caused by a serious forest fire—the most disastrous in the history of British Columbia—which raged for some time during August on Vancouver Island, about 100 miles north of Victoria.

The Canadian authorities, both Federal and Provincial, are consistently trying to combat forest fires by preventive measures and fire-fighting methods on the one hand and afforestation on the other.

An interesting movement instituted in Saskatchewan was the formation of a volunteer force of fifty junior forest wardens, who were required to sign a pledge to do all in their power to prevent forest fires, advance tree planting, and improve wood-lots, as well as conserve fish, birds, and animals. (R J A)

The United States, excluding its Territories, now has 630 million acres of forest land. More than 168 million acres of it, non-commercial, must from the standpoint of producing usable timber and timber products be crossed off the national ledger. This leaves 462 million acres of commercial forest land. Less than half of this now bears trees of saw timber sizes, 72 million acres are now virtually a no-man's-land, and the annual drain of species and sizes commonly used is much greater than their annual growth.

Restoration is needed to make these lands productive, together with a policy recognizing that some 630 million acres, more valuable in forests than for any other purpose, need protection from fire, insects, diseases, and processes of destructive exploitation. According to a special message addressed by the President to Congress, the essentials of a plan of action are co-operation, regulation, and extension of public ownership and management. It is estimated that the best three-fourths of the commercial forest land is still in private ownership In 1937 a check, made by the Forest Service, indicated that in the interests of conservation community and State ownership and management should be extended to 48 million acres, and Federal ownership and management to 59 million acres in and near existing National Forests

The National Forest system now includes 175,238,168 acres of federally owned lands They are distinct from National Parks in that they are administered so that all resources may be used as well as renewed, and more than 1,280 million ft of timber was harvested from them in 1938.

FORMOSA (TAIWAN), a large island in the Western Pacific, between the East and South China seas, bisected by the Tropic of Cancer; area 13,429 sq miles, capital, Taihoku; population (1935) 5,315,642, mainly Chinese. Formosa has been part of the Japanese Empire since 1895, when it was conquered from China. The governor-general is Admiral Seizo Kobayashi. An important Japanese naval base is at Mako, in the Pescadores, islands off the western coast of Formosa. The importance of the island as an aeroplane and naval base has been demonstrated during the hostilities with China Formosa has been intensively exploited, Japanese investment in the island being estimated at 400,000,000 yen (£40 million at pre-devaluation rates of exchange) Most of this capital has been invested in the sugar industry. Many of Japan's needs—sugar, bananas, pineapples, citrus fruits—are largely or entirely supplied from Formosa, which is also a large producer of rice and the world's largest source of natural camphor. In 1936 Japan received over 99 per cent of Formosa's exports and supplied over 80 per cent of its imports. Taihoku was bombed by Chinese aeroplanes in Feb. 1938; but both the loss of life and the material damage were very slight. (W. H. CH.)

FOUNDATIONS AND TRUSTS. In 1938 the National Institute of Economics and Social Research was formed in Great Britain, funds being granted by the Sir Halley Stewart Trust, Lord Leverhulme's trustees, the Pilgrim Trust, and the Rockefeller Foundation Progress was made with the projected Nuffield College, Oxford, for social research, Lord Nuffield giving more land, and Mr. Harold Butler (ex-International Labour Office director) being appointed organizer. The National Playing Fields Association (1925) had dealt, to 1937, with 1,200 fields, of £3 millions estimated present value, the parallel King George's Fields Foundation had then received £395,000 (total of the King George Memorial Fund to Oct. 31, 1938, £604,731). King Edward's Hospital Fund (1897) had £4,102,212 in hand, having made disbursements (1937) of £302,000. Lord Baldwin's Imperial Relations Trust created two scholarships. The Rhodes Birthplace Memorial Trust presented Rhodes's birthplace to Bishop's Stortford, Herts, providing maintenance.

British Dominions. In Australia, outstanding events of 1938 were: (New South Wales) purchase, by the Thomas

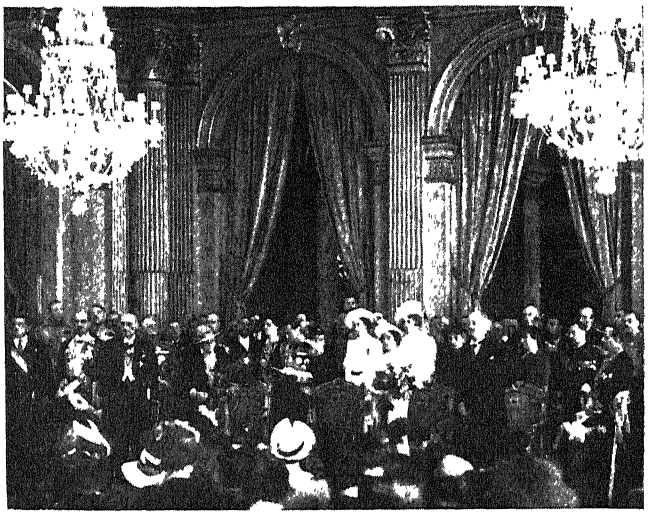
Walker Charitable Fund, of the Yaralla Estate (£65,000) for a convalescent home for men, (South Australia) founding of Sir George J. R. Murray's trust (£10,000) for a Law Library, Adelaide. In New Zealand, Canterbury College, Christchurch, benefited by Mr R. Bell's travelling scholarship trust (£5,000). In Canada, the National Research Council of Canada (1916) and the Ontario Research Foundation (1928), subsidized, respectively, by the Dominion and Provincial governments, pursued their activities in the interests of industrial progress

United States. The Carnegie Corporation of New York (1911; capital, $135 millions) and Carnegie Institution of Washington (1902, capital, $33 millions) applied incomes in aid of education and research in fields, respectively, covered and not normally covered by existing organizations, the Carnegie Endowment for International Peace (1910; capital, $10 millions), in furtherance of its avowed policy, distributed (1937) $672,800, the bulk of it to organizations for promoting international intercourse and education and the study of international law; and the Carnegie Foundation for the Advancement of Teaching (1906; capital $27 millions) reported distribution, to 1937, of nearly $33 millions in retiring allowances to teachers, pensions to their widows, etc. The Rockefeller Foundation (capital, $150 millions) bestowed, in 1937, funds totalling $9,500,000 for the advancement of education, particularly in medical, natural, and social science. Important in 1937 was the inauguration of the Charles Hayden Foundation (capital, $50 millions) for the "betterment and enlightenment" of young men, primarily of the cities of New York and Boston.

Europe. In Belgium, M. Louis Empain's children's health trust (1931) was reconstituted (1938) as "Air et Soleil" (capital, 1,500,000 frs.) and he founded (1938) another, "Pro Juventute" (capital, 1 million frs.), for the physical, moral, and intellectual welfare of youth; in 1937 was founded the George Eastman (children's) Dental Institute (capital, 100,000 frs.). In Norway the Wilhelmsen Fund for Bacteriological Research (capital, Norw. kr. 800,000) was founded (1938) at Oslo University. (H. Fw.)

FRANCE. The year 1938 was characterized in home affairs by the progressive weakening and eventual dislocation of the Popular Front, formed before the 1936 elections by a coalition of Radical-Socialists, Socialists, Communists, and some lesser groups. Its beginning saw in office a Chautemps-Blum cabinet, a Popular Front government under Radical leadership, with Socialists participating and Communists theoretically supporting. Its conclusion witnessed in power a Daladier ministry, composed of Radicals and members of the Centre parties, relying for its majority on the Centre and the Right, and with the Socialists and Communists now in open opposition.

The previous year had passed out in a wave of industrial unrest, culminating in a big Paris transport strike. Nominally the workers, employees of the municipality, were merely claiming similar pay increases to those which had just been granted to State employees. It was widely alleged, however, that the real aim of the men's Communist leaders was to bring to an end the "pause" which M. Blum had proclaimed some months before in order to reassure capital, frightened by the swift enactment of the social laws and alarmed at the insufficiency of the Blum government's financial policy. On Jan. 6 M. Chautemps declared in a press statement that industrial strife must cease, since it was endangering France's security and prosperity. He announced that he was calling a peace conference of workers' and employers' delegates, who would negotiate new agreements to which the government would give the force of law by submitting this code of social peace to parliament. To this conference, however, the big employers represented by the Employers' Federation refused to come.



The Times]
KING GEORGE, WITH QUEEN ELIZABETH AND PRESIDENT LEBRUN, REPLYING TO THE ADDRESS OF WELCOME AT THE HOTEL DE VILLE, PARIS, JULY 20, 1938

This was the position when the Chamber reassembled, and M. Chautemps made a speech which could only be interpreted as an invitation to the Socialists and Communists to overthrow him. There was no vote, however; the Socialist ministers merely resigned, the rest of the cabinet followed them, and the formation of a new cabinet was entrusted to M. Georges Bonnet, the outgoing finance minister.

M. Bonnet was widely credited with having played the leading part in bringing the premier to his abrupt decision. He had long been anxious to break the government's dependence on the Communists, and at the Radical Congress the previous October had been seen behind a manœuvre which nearly led to the ministry's fall then. He was to be disappointed, however, in his hopes of the reversion of the premiership. Not only did the Socialists blankly refuse to have anything to do with his cabinet and the C.G.T. hint at the possibility of a general strike against it, but even his own party, the Radicals, turned against him. He abandoned his attempt; M. Blum vainly essayed to form a ministry of National Concentration ranging from the Communists to the Centre, and eventually M. Chautemps, who had never, after all, been defeated in parliament, was summoned to form a new government in succession to himself. The Socialists refused their participation but promised their support, and the government was formed as an all-Radical one, with M. Delbos staying foreign minister and M. Daladier minister of defence, but with M. Marchandeau minister of finance and M. Guy La Chambre replacing M. Cot at the air ministry. M. Chautemps's ministerial declaration was most conciliatory to the Left. He expressed sympathy towards the idea of a government of National Concentration and promised an old age pensions bill. On Jan. 21 he obtained a majority of 501 votes to one, with 105 abstentions.

"The bigger the government's initial majority, the shorter will be its life", a cynic had forecast, and M. Chautemps was well enough aware of his team's instability to make soundings about the possibility of broadening its basis. He pushed through parliament the first part of his Labour

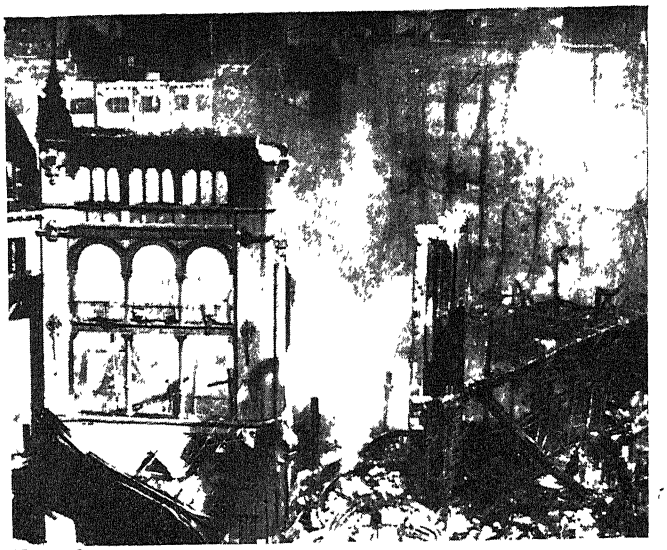
Code, a Conciliation and Arbitration Bill providing that on a five per cent rise in the cost of living, machinery for the revision of wages should be set in motion. Then, at the beginning of March, he made known his wish to obtain special financial powers to restore capital's confidence with a view to launching a big new Defence Loan He indicated that the pensions bill must be dropped and the 40-hour week to some extent shelved. The Socialists refused to support him, and M. Chautemps submitted his resignation to the President on March 10, once more without having suffered a defeat.

This was the beginning of a crisis which was to have a tragic historic significance, for it coincided with Germany's annexation of Austria. The presence of a stable government in France might have caused the Fuhrer to hesitate, and perhaps even to withdraw at the last moment. The resignation of M. Chautemps and M. Blum's inability to form a cabinet quickly encouraged Herr Hitler in his action. Once again M Blum tried to form a ministry ranging from the Centre to the Communists, once more the Centre refused. Finally, he constituted a Popular Front government with Socialist and Radical participation, M Paul Boncour being foreign minister, M Daladier war minister, M. Dormoy at the interior, and M. Spinasse minister of finance.

M. Blum had formed his cabinet in the hope that it might shortly be possible to broaden its basis into that cabinet of National Concentration that was still at the back of his mind. Members even so far to the Right as M. Marin had been won by the pressure of international events to sympathy with the idea. But a new wave of stay-in strikes in Paris at the end of March dashed these hopes by turning such Right-Wing sympathizers against the Communists again. The Senate early showed its bitter opposition to M. Blum, and when he announced a financial reform plan that included proposals for a graduated capital levy, his doom was sealed. The Chamber voted the plenary powers which M. Blum demanded, but those Radicals who had voted for them were themselves the most eager in urging the Senate to turn the cabinet out. The Senate, by 214 votes to 47, refused to grant M. Blum the plenary powers, and the cabinet resigned on April 8.

On April 10 M. Daladier, President of the Radical Socialist Party, formed a government in which the Socialists refused to co-operate, M. Daladier remained minister for war, M. Bonnet somewhat surprisingly went to the foreign ministry, M. Sarraut held the interior, M. Campinchi the navy, and M. Marchandeau was minister of finance. Two members of the Centre, both favourably viewed by the Left, were brought in, M. Paul Reynaud as minister of justice and M. Georges Mandel, Clemenceau's former collaborator, as Colonial minister, and there were no undersecretaries. The Socialists continued for a time to vote for the government; they did not pass into open opposition till the Paul Reynaud financial decrees at the end of the year. The Communists abstained, and the first division in the Chamber gave the new ministry a majority of 508 to twelve. But the Popular Front was finished. The election of a National Republican to a senatorial seat in Paris seemed to many to mark the swing of opinion and the desire of the country to rid itself of Communist influences.

The new government proved by its actions its determination to start a new leaf. It put an end to industrial unrest, as exemplified by the metal-workers' strike in the Paris district, which involved 210 factories and 157,000 workmen. The social laws were to be preserved, but they were to be adapted and rendered more flexible. The



Keystone]
THE GREAT MARSEILLES FIRE BROKE OUT IN THIS STORE IN THE CANEBIÈRE (OCT. 28, 1938), HERE SEEN THE NEXT DAY

C.G.T. would not be allowed to become an instrument in the hands of any particular party. The financial position, it held, demanded a new effort in the economic sphere, in production and in commerce, for there could be no happy working class in a ruined state. "All round us Europe is changing", M. Daladier declared, in a broadcast speech; "whole nations are being ruined by new ideologies. States are disappearing, and new Empires are growing up. That is why national defence to-day goes far beyond the mere question of military organization. All our problems—social, political, financial, and economic problems—are closely linked with the problem of our security. Isolated problems no longer exist There is only one problem, and that problem is the safety of our country".

The first step was a new devaluation, the second since the Popular Front came to power. With the consent of the two signatories of the 1936 agreement, Great Britain and the United States, it was decided to allow the franc to decline to 179 to the pound, and there to stabilize it. Thus in two years the Poincaré franc has lost 56 per cent of its value. A series of decrees aimed at bringing about an economic revival. In August M. Daladier took measures to introduce a 48-hour week in factories necessary for national defence. "France is lost", he said, "if she cannot work under normal conditions". Two ministers, M. Frossard and M. Ramadier, thereupon resigned, and were replaced by M. de Monzie and M. Pomaret. Some weeks later M. Reynaud, the minister of justice, exchanged portfolios with M. Marchandeau, finance minister, and resolutely attacked the financial problem. His November decrees, he claimed, constituted a coherent scheme of financial reconstruction by means of an economic revival and the increase of production. But there were many critics, and those, not only on the extreme Left, who complained that the Reynaud decrees were on the contrary a collection of disparate measures forming no definite system, hitting hardest at the working and middle classes and relaxing rather than making more stringent the checks on well-to-do investors with a preference for bearer bonds instead of registered shares. They regretted this the more, since M. Reynaud's financial powers were acknowledged, and the unfavourable balance of trade was disturbing: it increased from five milliards in 1935 (francs at 1928 par) to over seven milliards in 1936 and in 1937 reached nine milliards 153 millions.

Under the new plan, at all events, increases in taxation will add about nine milliards to the revenue. The 1939 budget provides for an estimated revenue of 66,345,170,829 francs and an expenditure of 66,317,371,619. This does not include extraordinary expenditure on national defence, which will be covered by loans (35 milliards instead of 55). A committee of administrative reorganization will cut down unnecessary expenditure. The rejection of exchange control, the lowering of the rate of interest with a view to the expansion of credit and the promotion of a liberal economy with high production are other characteristics of the measures adopted by the finance minister. In the economic field, the first results have been encouraging. Several milliards of francs have repatriated themselves, the franc has gone up, and it has even been necessary to check this tendency, the rate of Treasury bonds has been reduced; stocks have risen and the bourse is more active, there has been a slight decrease in unemployment and increase in goods traffic. But the reception of the decrees was not fortunate. They brought to a head once more the difference between the two seemingly irreconcilable tendencies in the Popular Front: those who would seek to "bring capital to heel" when it takes fright at large measures of social reform, and those who would win back its support by wide concessions to orthodox economics. There was considerable popular questioning over the incidence of the new taxes, and it is possible that a number of Radicals might have voted against them had not the C.G.T. been jockeyed by their Communist wing into calling a one-day protest strike against them. The government's decision to mobilize the transport workers made it obvious before the day that the strike would fail, and when the decrees came before the Chamber, M. Daladier obtained a vote of confidence by 315 votes to 241. The Socialists and Communists had both moved into opposition and a new majority had been formed. The reign of the Popular Front was over.

External affairs have had a very strong repercussion upon internal politics during 1938. France has not looked on unmoved while Germany, since March 6, 1936, has destroyed bit by bit the treaty of Versailles and the Europe of 1919. The civil war in Spain, the high-handed annexation of Austria by Germany, and the dismemberment of Czechoslovakia have given rise to a grave situation in Europe which very nearly ended in war. It seems probable that the *Anschluss* with Austria succeeded only because a ministerial crisis and serious internal difficulties paralysed French action. A *démarche* from Paris asking the Duce to unite with the Western Powers, France and Great Britain, to save the independence of Austria was rejected. This enormous increase of power on the part of Germany, which threatened the independence of every state, had the result of tightening the bonds of friendship and collaboration between France and Great Britain. This was the significance of the agreements signed in London on April 27–29 by the British ministers and MM. Daladier and Bonnet. These agreements showed how fully the two governments had recognized the community of their interests and of "those national and international ideals which unite the two countries". The two governments, they laid down, would pursue a concerted policy in Spain and in Czechoslovakia. France was bound, by the treaty of 1925, to go to the aid of Czechoslovakia if she is attacked. Great Britain had not the same engagements, but, as Mr. Neville Chamberlain said on March 24, "Where peace and war are concerned, it is not only legal obligations that count". The visit of the King and Queen of England to Paris (July 19-22) and the extraordinarily warm welcome they received from the French people afforded striking confirmation of the close accord between the two nations.

This accord was clearly shown with regard to Czechoslovakia. If it did not succeed in preserving the integrity and the moral independence of Czechoslovakia, it at any rate assured peace. The partial mobilization of Sept. 24 was carried out under conditions of calm and resolution which showed that the French people is prepared to carry out its duty in all circumstances. But German hegemony has been established throughout Central and Eastern Europe. The elimination of Czechoslovakia as a political and military factor, of which the departure of the French Military Mission from Prague on Dec. 14 was the symbol, affords a dangerous increase of power to Germany. But the passion for peace among all the peoples was clearly shown. M. Daladier said, on his return from Munich, "We forced a peace plebiscite in four countries".



The Times]
MIMOSA GROWN FOR LONDON AT MANDELIEU, NEAR CANNES



Topical Press]
THE AUSTRALIAN WAR MEMORIAL AT VILLERS-BRETONNEUX, UNVEILED BY KING GEORGE, JULY 22, 1938

Nevertheless, the situation continues to be fraught with danger for the future Certain newspapers advocate that France should detach herself from the Continent of Europe and should abandon the hegemony to Germany, devoting herself entirely to her colonial empire But that would appear an impossible choice If the power of Germany were to be allowed to develop unchecked in Europe, she would gain so great a predominance that there would be no security either for the French or for the British colonial empires Herr von Ribbentrop visited Paris on Dec 6 and signed an agreement with M Bonnet by which France and Germany declare that they have no territorial demands upon each other, and undertake to settle by diplomatic methods any difficulties that may arise between them This agreement would seem to indicate that Germany does not want war, but is preparing to pursue a policy of economic and political hegemony in Eastern Europe, from which she wishes France to hold entirely aloof. The attacks and demands made in December in the Italian Press show that Italy is trying to stir up confusion in order to obtain some advantage which France is in no way prepared to grant to her. (M Bonnet's statement on Dec 15 is quite categoric as to that)

Agreements were signed on July 1 and 4 between France and Turkey—France acting in virtue of her Syrian mandate —which settled the difficulties regarding the Sanjak of Alexandretta and the Turkish population there, which amounts to forty per cent. The Sanjak remains an integral part of Syria, but a Turkish armed force will in future have the right to remain in occupation there, together with French and Syrian forces. The political and military importance of Turkey on the European chessboard explains the concessions made by France in this matter.

It is unlikely that they would have gone so far had it not been for the disturbed state of the continent and the necessity for France to be certain of her security in the eastern Mediterranean at any rate. Similar considerations explain the non-ratification of the Franco-Syrian Treaty, under which Syria should soon have been receiving the status of 'Iraq, a delay which provoked widespread anti-French demonstrations at the turn of the year.

(R. PIN)

Area and Population :

Area 212,736 sq. miles.
Population (est. June 1937) 41,950,000.
Chief Towns (pop. 1936) :

Paris	2,829,746	Nice	242,000
Marseilles	914,000	Toulouse	213,000
Lyons	571,000	Lille	201,000
Bordeaux	258,000	Nantes	195,000

President. M. Albert Lebrun.

Language. French.

Religion. Roman Catholic; *c.* 1,000,000 Protestant.

Production 1937 :

Wheat	7,017,284 metric tons
Barley	1,016,615 ,, ,,
Rye	739,663 ,, ,,
Oats	4,346,595 ,, ,,
Maize	514,540 ,, ,,
Potatoes	15,911,379 ,, ,,
Beet sugar	8,666,000 ,, ,,
Wool	18,000 ,, ,,
Coal	44,319,000 ,, ,,
Iron Ore	37,772,000 ,, ,,
Pig Iron	7,916,000 ,, ,,
Steel	7,903,000 ,, ,,
Aluminium	34,500 ,, ,,
Artificial Silk	33,000 ,, ,,
Wine	54,310,000 hectolitres



Keystone]
M. BONNET (RIGHT) AND HERR VON RIBBENTROP SIGNING THE FRANCO-GERMAN PACT, DEC. 6, 1938

Industry (1929 = 100) :

Index of Industrial Production (average 1937) 82·8
,, ,, ,, ,, (March 1938) 78·7

Labour :

Index of Employment (average 1937 : 1930 = 100) 78·6
,, ,, ,, (August 1938 : ,,) 80·3
Unemployed in receipt of benefit (average 1937) 350,333
,, ,, ,, ,, (av. Sept. 1938) 338,409

Overseas Trade, merchandise :

Imports (1937) 42,315,000,000 francs
Exports (,,) 23,935,200,000 ,,
Imports (1938) 45,981,000,000 ,,
Exports (,,) 30,386,000,000 ,,

Communications :

Roads : national, 48,000 miles ; secondary, 330,000 miles.
Railways 26,300 miles.
Airways, 1937 mileage covered 6,562,922
,, ,, passengers 89,076
,, ,, mails carried 437·3 metric tons
,, ,, freight carried 1,217·4 ,, ,,
Shipping, gross tonnage (June 30, 1938) 2,903,600
Shipping, net tonnage entered (monthly average 1937) 4,562,000
Shipping, net tonnage entered (Aug. 1938) 4,668,000.
Shipping, net tonnage cleared (monthly average 1937) 3,697,000.
Shipping, net tonnage cleared (Aug 1938) 4,032,000.

Finance and Banking :

Revenue, ordinary (1937) 43,379,000,000 francs
Expenditure, ,, ,, 48,168,000,000 ,,
Revenue, ordinary (est. 1938) 54,776,000,000 ,,
Expenditure, ,, ,, ,, 54,739,000,000 ,,
Expenditure, ordinary (est. 1939) 64,500,000,000 ,,
,, extraordinary ,, 29,600,000,000 ,,
Public Debt, domestic (Jan. 1937) 337,760,700,000 ,,
Exchange Rate (average 1937) 124·61 francs = £1 stg.
,, ,, (Nov. 26, 1938) 178·75 ,, ,, ,,
Notes in circulation (Nov. 17, 1938) 107,348,895,000 francs
Gold reserve ,, ,, 87,264,285,000 ,,

Education 1938 :

Elementary schools, 81,000; scholars, 4,900,000.
Secondary : ,, 546; ,, 270,000.

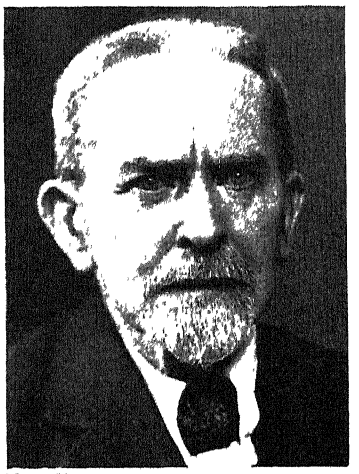
Miscellaneous :

Wireless receiving-set licences (Dec. 31, 1937) 4,163,692.

Telephones, 1936: 1,482,000 subscribers; 940,000,000 calls.
Motor vehicles licensed (Dec. 31, 1937): Total vehicles 2,200,000 (558,000 commercial). (W. H. W.)

FRANCIS I, Prince of Liechtenstein, was born on Aug. 28, 1853, and died at Feldsberg, Moravia, on July 26, 1938. He succeeded to the throne in 1929, on the death of his brother, John II. Francis was in early life a member of the Austro-Hungarian diplomatic service, and from 1895 to 1899 was Ambassador in St. Petersburg. In 1929, following his accession, he married Elisabeth Bethlenfalva, *née* Gutmann, a Viennese of Jewish ancestry. On March 31, 1938, finding the European situation too complex for a man of his great age to grapple with as ruler of an independent principality, Francis delegated his powers to his great-nephew, who then became Regent and, on the old Prince's death, succeeded as Francis Joseph I.

FRAZER, SIR JAMES GEORGE, O.M., F.R.S., D.C.L. (1854), British anthropologist, philosopher, and student of comparative religions, was honoured by a knighthood in 1914, the Fellowship of the Royal Society in 1920, the Order of Merit in 1925, the freedom of his native city, Glasgow, in 1930, the bestowal of various foreign honours and the honorary degrees of many universities, culminating in 1938 in the doctorate of philosophy of the University of Athens, conferred in recognition of his many services to the study of the Greek classics.


Vandyk
SIR JAMES FRAZER

Sir James, a notice of whom will be found in the *Ency. Brit.*, vol. 9, p. 710, continued his very extensive literary output well beyond his eightieth year; and among his more recent works are: *The Devil's Advocate: a plea for superstition* (1927), a five-volume edition of Ovid's *Fasti* (1929), *Creation and Evolution in Primitive Cosmogonies* (1935), the third and fourth volumes of *The Fear of the Dead in Primitive Religions* (1936), and supplements to *The Golden Bough* (*Aftermath*, 1936), and *Totemism and Exogamy* (*Totemica*, 1937).

FREEMASONRY. In the past year the attack on democratic governments in Central Europe has been accompanied by strenuous assaults on Freemasonry. In Austria the Grand Lodge of Vienna has been suppressed and its chief officers interned; while in Czechoslovakia both Grand Lodges—the "National" and the "Lessing zu den Ringen"—have been forced to suspend working. On the other hand, political pressure in Switzerland and misrepresentation in the Netherlands have been successfully resisted. These events, and other repercussions of the political situation, led in August to an exceedingly important joint proclamation from the three Grand Lodges of England, Scotland, and Ireland. This statement defines and stresses the purely religious tenets of the order—as belief in God and in the sanctity of the Bible. A Freemason is forbidden to countenance any act tending to subvert the peace of the state which he inhabits. The duties of loyalty and good citizenship are expressly inculcated: but beyond this the Grand Lodges forbid alike *individual* discussions of theological or political questions or *general* opinions on questions of domestic or foreign state policy. This proclamation admits the existence of irregular quasi-Masonic bodies which do not adhere to these principles, but refuses recognition to them. As a corollary to this statement it may be safely inferred that Masonic policy (at least among English-speaking peoples, who form nine-tenths of the whole) strongly favours the spread of international understanding by personal contact, and the relief of individual distress by private charity; but expressly discourages the application of Lodge funds to the relief of political refugees, or any other formal expression of collective sympathy.

In December the M.W. the Grand Master of England, H.R.H. the Duke of Connaught and Strathearn, to the great regret of all Freemasons announced his retirement. His 38 years' services to Freemasonry had seen the number of Lodges within the Craft more than doubled. H.R.H. the Duke of Kent was nominated as his successor.

In Great Britain an increased membership of 100,000, and the consecration or preliminary approval of approximately 45 Craft Lodges were recorded. The Canadian total of 173,654 members in 1,381 lodges also represents a marked increase. Here the year was remarkable for the bicentenary celebration of the foundation of Freemasonry in what is now the Dominion of Canada. This was held at Halifax, Nova Scotia, on July 11, and was attended by deputations from numerous Grand Lodges, including those of England, Scotland, and Ireland. These subsequently made an extended tour throughout the nine provinces of the Canadian Jurisdiction, and over the border to Massachusetts and New York, U.S.A. To the English deputation "the relations which exist between the Grand Lodge of Canada and U.S.A. are most happy, and obviously reflect not only a mutual respect but a genuine fraternal feeling".

In U.S.A the 50 Grand Lodges reported a total of 2,577,028 Master Masons. A marked strengthening of masonic ties, particularly with those of Latin America, was felt throughout the year. (T. S.)

FRENCH ACADEMY. Charles Maurras and André Maurois were elected members of the French Academy in 1938.

A famous French Review published the remark: "The last elections at the Academy have created a sensation. Everybody thought that Maurois had long been a member and that Maurras never would be one". André Maurois is, in the best sense of the word, *académique*, and he is one of the most celebrated persons in an Academy in which only a minority are celebrated. It was universally felt that Maurras's election, which came first, was not so easily justified, and it was even suggested that the Academy was influenced by the fact that Maurras had only just come out of prison. He had been given two years by a merciless tribunal for inciting his followers to murder M. Léon Blum—after an assault on M. Blum, by a follower of Maurras, had taken place. The Academy is suspect, in its majority, of being anti-republican. In some manner, the election of Maurois, who is considered to be a liberal, was a sort of apology to the Republic from the Academy. In December Jérôme Tharaud was elected. He represents the more worldly element in the famous *équipage* of the two brothers Jérôme and Jean Tharaud, who are best known for their books about the strange existence of Central European Jews in the peace periods of long ago: *À l'ombre de la Croix*, etc. This election is universally welcomed, as the great literary merits of the Tharauds are beyond dispute. (D. S.)

FRENCH COLONIAL EMPIRE. Total area (approx.), 4,787,000 sq. miles; Total population (est. Dec. 31, 1936), 111,545,000. The following table lists the French colonies, protectorates, mandated territories, etc., together with essential statistics appropriate to each of them, including the mother country itself:

Country	Area sq. miles (approx.)	Population est Dec. 31 1936 (000's omitted)	Capital	Status	Governors, Premiers, etc.
France	212,736	41,910	Paris	republic	*President* M. Albert Lebrun *Premier:* M Edouard Daladier.
ASIA					
French Indo-China	283,000	23,150	Saigon		*Governor-General* · M Brévié
Annam	55,800	5,656*	Hué	protectorate	*Resident-Superior* M Graffeuil.
Cambodia	69,200	3,046*	Pnom Pneh	protectorate	*Resident-Superior:* M. Touzet.
Cochin-China	25,400	4,616*	Saigon	colony	*Governor* · M. Pagès.
Laos	88,800	1,012*	Vientiane	protectorate	*Resident-Superior* · M Thibaudeau
Tonkin	43,800	8,700*	Hanoi	protectorate	*Resident-Superior:* M. Châtel
Kwangchow Wan	310	250	Fort Bayard	territory (leased from China)	*Administrator:* M. Le Prévot.
French India	190	300	Pondicherry	colony	*Governor.* M Bonvin
Syria and Lebanon	77,700	3,500	Damascus	mandated territory	*High Commissioner* M. Puaux
AFRICA					
Algeria	845,400	7,310	Algiers	colony, under jurisdiction of the Minister of the Interior	*Governor-General* M. Le Beau.
Morocco (F)	165,800	6,360	Rabat	protectorate, under the Minister of Foreign Affairs	*Sultan:* Sidi Mohammed. *Resident-General.* General Noguès
Tunis	48,800	2,630	Tunis	protectorate, under the Minister of Foreign Affairs	*Bey.* Sidi Ahmed. *Resident-General:* M Labonne.
French Somaliland	8,380	46	Jibuti	colony	*Governor:* M Deschamps.
Madagascar and Dependencies	236,900	3,800	Antananarivo	colony	*Governor-General.* M. Henry.
Réunion	920	210	St Denis	colony	*Governor:* M. Court.
French Equatorial Africa	867,700	3,500	Brazzaville		*Governor-General:* M Reste.
Gabon	106,500	410*	Libreville	colony	*Lt.-Governor:* M. Masson.
Middle Congo	159,700	747*	Brazzaville	colony	*Administrator:* M. Bahot-Launay
Oubangui-chari	214,600	834*	Bangui	colony	*Lt-Governor:* M. de Masson.
Tchad	386,900	1,432*	Fort Lamy	colony	*Lt-Governor:* M Boué
French West Africa	1,807,700	14,700	Dakar		*Governor-General:* M. de Coppet.
Senegal	77,000	1,790*	St. Louis	colony	*Lt.-Governor:* M. Parizot.
Mauritania	330,000	383*	St. Louis	colony	*Lt.-Governor:* M. Durand.
French Guinea	97,000	2,011*	Conakry	colony	*Lt.-Governor:* M. Blacher
Ivory Coast	183,000	3,851*	Abidjan	colony	*Lt-Governor:* M. Mondon
Dahomey	43,000	1,352*	Porto Novo	colony	*Lt.-Governor:* M. Annemet.
French Sudan	577,000	3,569*	Bamako	colony	*Lt-Governor:* M Rouqué.
Niger	500,000	1,747*	Niamey	colony	*Lt-Governor:* M Sazelat.
Cameroons	161,200	2,390	Yavundé	mandated territory	*Commissioner.* M. Boisson
Togoland	20,000	740	Lomé	mandated territory	*Administrator-Superior:* M. Montanié.
AMERICA					
French Guiana, including Inini	34,600	37	Cayenne	colony	*Governor:* M. Veber.
Guadeloupe	690	305	Basse-Terre	colony	*Governor:* M. Allix.
Martinique	386	250	Fort-de-France	colony	*Governor:* M. Spitz.
St. Pierre and Miquelon	93	4	St. Pierre	colony	*Administrator:* M. de Mornas.
OCEANIA					
New Caledonia and Dependencies	7,310	53	Noumea	colony	*Governor:* M Jore.
New Hebrides	5,700	60	Vila	condominium	*Resident-Commissioner:* M. Sautot.
Pacific Islands, including Society Is., Tuamotu Is., Tubuai Archipelagos, etc.	1,540	40	Papeete	colony	*Governor:* M. Chastenet de Gurry.

* Population 1936 census.

FRENCH EQUATORIAL AFRICA. The economic situation in French Equatorial Africa has shown a continuous improvement since 1936. In 1937, exports reached 510,898 tons, 155,457 tons up on the previous year, and were valued at 256,350,000 francs, a 161,761,000 francs increase. Imports also increased by 22 per cent. This progress was carried on in 1938.

These increases, coinciding with a severe restriction of administrative expenditure, made it possible to balance the 1937 budget of 197,517,640 francs with an eight million francs surplus. This was achieved despite financial assistance to agriculture, the fight against sleeping sickness, road and river improvement, and improvements in the port of Pointe-Noire.

The Colonial Minister, by a decree of Dec. 31, 1937, substituted for the central administration set up in 1934 a

certain degree of autonomy in the administrative subdivisions. Natives will henceforth be admitted to the municipal committees, the chambers of agriculture and commerce, and the administrative council Another decree enables half-breeds to obtain French citizenship more easily Finally, a system has been instituted for defining rights of property in accordance with local custom, thereby assuring the stability of ownership of the land.

(C A. J)

Area and Population :
Area 867,700 sq miles.
Population (est. Dec 31, 1936) 3,500,000 (Europeans, 5,000).
Territories and their Capitals Gabon (Libreville), Middle Congo (Brazzaville), Oubangui-Chari (Bangui), Tchad (Fort Lamy)
Governor-General. M. Reste.
Production: (E exports)

Maize (1935)	38,000 metric tons
Coffee (1937)	1,800 ,, ,,
Cotton (1935)	7,100 ,, ,,
Ground nuts (1935)	17,000 ,, ,,
Palm oil (E) (1936)	5,400 ,, ,,
Palm kernels (oil content, E) (1937)	6,700 ,, ,,
Gold (E.) 1937	659 kilogrammes

Overseas Trade 1936 :

Imports	168,531,500 francs
Exports	174,046,000 ,,

Communications 1937 :

Roads, main	c. 7,000 miles
Railways, open for traffic	319 ,,

Finance 1938 :

Revenue, local (est.)	224,629,000 francs
Expenditure, ordinary (est.)	220,629,000 ,,
Expenditure, extraordinary (est.)	4,000,000 ,,

FRENCH GUIANA, a French colony in north-eastern South America including the separate interior territory of Inini. Language, French ; capital, Cayenne (pop. 11,704) ; governor, René Veber. The area, including Inini (area, 25,000 sq. miles) is 34,600 sq. miles. The population, including nearly 4,000 of Inini, but excluding uncivilized Indians, was officially estimated at 37,000 in 1938, with about 6,000 foreigners. The colony is administered by a governor and general council, and is represented in the French parliament. Inini has a separate council. The famous French penal colony, Devil's Island, situated along the northern border, is administered separately. Plans are under way to eliminate it entirely, but lack of penitentiary facilities elsewhere compelled its continuance in 1938. In 1937, imports and exports totalled respectively 52,700,000 francs and 36,900,000 francs, representing gains of 18½ and 25 per cent, accounted for by devaluation of the franc. Imports, chiefly foodstuffs and manufactured articles, were 64·7 per cent from France, with the United States and French colonies next. Practically all the exports (97·3 per cent), comprising principally gold (9,205,219 francs value), tulip-wood, rum, and bananas, went to France The first 11 months of 1938 showed 50,900,000 francs imports, 42,800,000 francs exports. French Guiana has regular external steamer and air transport services, 7¾ miles of railway, 155 miles of highways, and good interior waterways. Monetary unit: the French franc. (L. W. Be.)

FRENCH INDIA. The latest available statistics for this French territory are given below :

Area and Population :
Area 190 sq. miles.
Population (est. Dec. 31, 1936) 300,000 (Europeans 500).
Chief Towns : Pondicherry (46,200 ; cap.) ; Chandernagor (27,200) ; Karikal (17,000) ; Mahé (13,700) ; Yanaon (5,000).
Governor. M. Bonvin.
Production 1936 :

Rice	23,700 metric tons
Ground nuts	5,200 ,, ,,

Overseas Trade 1936 :

Imports	98,812,000 francs
Exports	82,747,000 ,,

Finance 1938 :

Revenue, local (est)	37,368,089 francs
Expenditure, ordinary (est.)	35,091,089 ,,
Expenditure, extraordinary (est)	2,277,000 ,,
Currency	rupee (Rs 1 = 11 francs)

FRENCH INDO-CHINA. Repercussions of the Sino-Japanese war were keenly felt during 1938 The attitude of the Indo-Chinese authorities was in entire accordance with the policy of the French government They remained friendly with China, and strictly correct towards Japan. The transit of arms by the Yunnan railway has been rigorously supervised and has been of insignificant dimensions. Measures were taken for the defence of Indo-China, and the native army was increased by 20,000.

Economic development is in progress under the intelligent guidance of Governor-General Brévié Saigon has become, after Algiers and Oran, the third most important port of France overseas, reckoned on a basis of total tonnage of merchandise imported and exported.

European and native colonists, especially the latter, have reclaimed vast tracts of marsh for ricefields and of forest for rubber. These two forms of colonization, far from competing, are complementary to each other. In spite of a slight decrease in export tonnage, foreign trade has increased from 268 to 417 million piastres, and exports have increased from 74 to 101 millions. The main problem which still arises is that of providing land or work in the factories for the very dense population (in places 500 to the square kilometre) of the deltas of Cochin-China and Tonkin. The Indo-Chinese railways have put the Saigon–Hanoi line into regular action. The port of Camranh is being developed. Air-France has introduced innovations in the shape of Dewoitine trimotors, and has organized the Hong Kong-Damascus route via Hanoi and Saigon. (R. Pin.)

Area and Population :
Area 283,000 sq. miles.
Population (est. Dec. 31, 1936) 23,150,000 (Europeans, 30,400 ; Chinese, 325,000).
Territories and their Capitals : Annam (Hué), Cambodia (Pnom Pneh), Cochin-China (Saigon), Laos (Vientiane), Tonkin (Hanoi).
Governor-General. M. Brévié.
Production :

Maize (1936)	459,600 metric tons
Rice (1936)	6,316,200 ,, ,,
Coffee (1937)	1,800 ,, ,,
Cane sugar (1936)	41,500 ,, ,,
Coal (1937)	2,198,000 ,, ,,
Tobacco (1936)	14,300 ,, ,,
Tea (,,)	11,000 ,, ,,
Ground nuts (1936)	15,300 ,, ,,
Copra (export) (,,)	10,700 ,, ,,

Overseas Trade 1937 :

Imports	1,578,600,000 francs
Exports	2,589,200,000 ,,

Communications 1937 :

Roads, main	6,017 miles

Railways, open 1,575 miles; under construction, 106 miles.
Finance 1938 :

Revenue, general and local (est.)	1,413,064,000 francs
Expenditure, ordinary (,,)	1,329,344,000 ,,
Expenditure, extraordinary (,,)	84,736,000 ,,

Currency unit—piastre = 10 francs.

FRENCH LITERATURE. Nothing very new happened in French literature during the year 1938. Preoccupation with political events amounted to anguish and created an atmosphere unfavourable to literature. Talented young men might get their books published (two notable novels by new writers were: *La Nausée*, by Jean Paul Sartre, and *Le Quartier Mortisson*, by Marie Mauron), but few readers took them seriously. For entertainment, the public looks occasionally, when it needs that sort of entertainment, to well-established favourites. But that sort of entertainment is obviously less and less sought after Literature is too mild, too ineffective a soporific to combat the nervous excitement of politics, national and international. It seems probable that, should a new masterpiece be published, it would go unnoticed But all the favourites gave new books; and many, very good books. As a rule the technique of an experienced writer grows better with oncoming age, and Duhamel, Maurois, Romains, Jacques Chardonne, Supervielle among others, published some of their most serious work.

Georges Bernanos created perhaps the greatest sensation of the year with *Les Grands Cimetières sous la Lune*. But the sensation was political rather than literary Bernanos, a violent catholic, attacks unrestrainedly the behaviour of the Franco party in the Balearic Islands. He was there, and the violence of his feelings against Italian soldiers and Spanish clergy is given full vent in the violence of his language. Completely sincere, he is extravagantly romantic, as his title indicates.

It was a mere coincidence, but a somewhat sinister one, that made Jules Romains publish this year *Prélude à Verdun* and *Verdun*, the fifteenth and sixteenth volumes of *Les Hommes de Bonne Volonté*. These War books are among the very best of the series, and among the half-dozen best books on the War. Romains' sense of humour has full play in describing some of the situations created by the War; but his sense of the pity of it is admirably conveyed; and his descriptive powers must be admired.

As a contrast, *Cécile parmi nous*, of Georges Duhamel, the seventh volume of the Pasquier series, is a restful tragedy of domestic happenings. We fully participate in Cécile's tragedy when she loses her baby and her husband; this is the sort of tragedy we like in literature. It is less ominous than books about Verdun. Cécile is one of the most charming ladies in literature: a sort of musical angel who has wandered amongst men—and who wants to have a baby. Duhamel's powers in the pathetic first brought him fame with his *Martyrs* and are fully exercised here.

Maurois published a masterpiece in the art of biography, *Chateaubriand*: a lovable nature, a *poseur*, a sceptic, a dreamer all in one; though perhaps not all at the same time always. A kaleidoscopic man, and a genius at self-presentation and at prose writing. Maurois' book is abundantly precise and scholarly and yet always alive.

Alain, who is not yet sufficiently known to the English public, though he has a great reputation in France, published an excellent selection of essays: *Esquisses de l'homme*. Alain is one of the best essayists in French literature; his essays never lengthen to more than four pages. He has a formidable number of volumes of them. This year's volume is as good as any to begin with. He talks about any subject under the sun and beyond the sun, so an analysis of his books is impossible. But his extraordinary vivacity of thought and expression, and his unexpectedness make the reading of his short essays a constant pleasure; he has a surprise in store for the reader at every turn of the page, as when he explains to the sleepless that it is much easier to sleep if you keep your boots on

Marcel Jouhandeau, with his *Chroniques maritales*, adds a volume to a kind of geographical survey of marriage. Never has the relationship of a married pair been submitted to so methodical an investigation The chief result is the fact that conjugal love is an affection *per se*, unconnected with sexual emotions, or romantic feeling, or love proper The subtlety of Jouhandeau is at times appalling and at times a little dreary. But he is one of the best writers now living.

Jacques Chardonne, who is well known as a novelist, gave us a charming autobiography in *Le Bonheur de Barbezieux*, and incidentally a true and queer picture of French provincial life

Jules Supervielle is acknowledged by most of the literary public as the best poet now writing after Paul Valéry. *La Fable du Monde* is a collection of poems containing a delightful and fantastic sort of mythology, in which a very puzzled God looks helplessly at his adorable but terrifying children. Delicacy and truth rather than forcibleness are Supervielle's strings. Lovers of poetry will regret the death, on Nov. 1, of Francis Jammes.

Pierre Hamp, in a genre which is all his own, in which literature is often roughly pushed aside by more interesting information, has published *Gueules Noires*, concerned mostly with work in the coal-mines. Hamp has a most forcible style and elementary but unavoidable feelings.

To wander a little from literature proper, a great event of its kind is the end of the publication by Emile Bréhier of a translation of Plotinus; and R. Aron, in *La philosophie de l'histoire*, brings to our attention facts and ideas which are indispensable at the present turning of history. (D. S.)

FRENCH WEST AFRICA AND THE SAHARA. The history of French West Africa in 1938 is chiefly concerned with the efforts of Governor-General de Coppet to stimulate its economic development.

Of a budget of 1,300 million francs, communications took 222,277,000 francs. Credits for works and equipment in 1938 exceeded by 145 million francs the 1937 figure. The chief items of expenditure were the modernization of the Kayes–Niger railway; the improvement of the line from Abidjan to Azaguie to allow the transport of material for the construction of the port of Abidjan; the enlargement of the ports at Dakar and Conakry; and surveys for the extension of the Ivory Coast railway from Bobo Diulasso through Ouagadougou, in order to feed the dense Hoaga population and provide against famines in the Sudan and Niger colonies. The Niger office meanwhile continued the big construction works on the Sansanding dam.

Ricefields have been started in Lower Guinea, and in the regions bordering on the Sahara wells have been dug with a view to facilitating communications across the desert until such time as it is possible to instal nomads on the irrigated lands.

The trade of French West Africa, which in 1937 increased by 25 per cent to 3,748,171 tons valued at 3,206,556,000 francs, of which 3,122,101 tons were exported, rose again in 1938. France is still French West Africa's chief customer.

The economic progress of the negro peasant is making him a serious rival to the French colonist. On the Ivory Coast, of 158,000 acres of coffee plantations 103,000 belong to natives; of 197,000 acres of cocoa plantations 170,000 are native-cultivated. It seems likely that the entire production of cocoa will pass out of European hands, as

has already happened on the neighbouring Gold Coast. Moreover, the government, which in French West Africa presides over a state-controlled economy, tends to reserve highly productive cultivation for the natives and industrial production for the Europeans. These peaceful developments were interrupted by the tragic incident of Thies On Sept. 27 strikers on the Dakar–Niger railway attacked police and troops The troops opened fire, and six strikers were killed and fifty wounded In France, the Left accused the extreme Right of fomenting the unrest in order to undermine the Governor, whose hostility to business interests was known; the Right condemned M. de Coppet's social measures. M. de Coppet returned to Paris in October, and M. Boisson, High Commissioner in the Cameroons, went to Dakar as temporary Governor.

(C. A. J)

Area and Population :

Area 1,807,700 sq. miles.

Population (est. Dec. 31, 1936) 14,700,000 (Europeans, 24,800).

Territories and their Capitals: Senegal (St. Louis), Mauritania (St. Louis), French Guinea (Conakry), Ivory Coast (Abidjan), Dahomey (Porto Novo), French Sudan (Bamako), Niger (Niamey).

Governor-General. M. de Coppet.

Production : (E. = exports)

Maize (1935)	536,500 metric tons
Rice (1936)	413,000 ,, ,,
Tobacco (1936)	2,600 ,, ,,
Cotton (1935)	5,500 ,, ,,
Ground nuts (1936)	890,000 ,, ,,
Palm oil (E.) (1937)	20,100 ,, ,,
Palm kernels (oil content, E.) (1937)	36,700 ,, ,,
Gum arabic (E.) (1936)	5,487 ,, ,,
Gold (E.) (1936)	3,559 kilogrammes

Overseas Trade 1936 :

Imports	902,600,000 francs
Exports	926,800,000 ,,

Communications 1937 :

Roads, main	7,845 miles
Railways, open for traffic	2,197 ,,

Finance 1938 :

Revenue, general and local (est.)	833,162,000 francs
Expenditure, ordinary (,,)	739,959,000 ,,
Expenditure, extraordinary (,,)	93,203,000 ,,

FRERE, WALTER HOWARD, English ecclesiastic, was born in 1863 and died on April 2, 1938. He was educated at Charterhouse and Trinity College, Cambridge, and Wells Theological College. He was curate at St Dunstan's, Stepney, from 1887 to 1892, when he joined the Community of the Resurrection, of which he was Superior from 1902 to 1913 and from 1916 to 1922. In 1923, after having first declined the appointment, he became bishop of Truro, being the only member of a religious order to become a bishop in the Church of England since the Reformation. In 1935 he resigned owing to ill-health, and returned to the Community at Mirfield. His publications include *The Use of Sarum* (2 vols., 1898 and 1902), *New History of the Book of Common Prayer* (1901), and *Russian Church History* (1918). He was also an authority on plainsong music, and did great service to English hymnology by his share in the preparation of the revised edition of *Hymns Ancient and Modern*, published in 1904.

FREUD, SIGMUND (1856–), Austrian psychologist and founder of psychoanalysis, of whom a biographical notice will be found in the *Ency. Brit.*, vol. 9, pp. 836–37. In spite of his advanced age and the troubled state of his country in recent years, he has continued his scientific work, especially as director of the International Journal of Psychoanalysis. Awarded the Goethe prize at Frankfurt in 1930 and elected a foreign member of the Royal Society in 1936, Freud has not only influenced the activities of specialists on the subject of psychoanalysis, but has also given a powerful impetus to psychology in general and affected many other fields of mental activity. The majority of his works have been translated into English, *The Interpretation of Dreams* being one of the most famous. Shortly after the annexation of Austria by Germany in March 1938, Dr. Freud left Vienna and settled in London, where it is understood he is engaged in completing a psychoanalytic work in connexion with the Bible.

FRIENDS, THE SOCIETY OF. The "London Yearly Meeting" of the Society of Friends, which includes the Quakers in Great Britain and in the Dominions, except Canada, has a membership of 20,444, according to its 1938 tabular statement. This is a net increase of 44 on 1937. There are 2,108 Friends in Ireland Membership of the American and Canadian Yearly Meetings is 111,592.

Most of the new groups in Germany, France, Holland, Czechoslovakia, and Sweden, attracted to Quakerism by war-time Quaker relief work, are now independent "Yearly Meetings". There are older-established Meetings in Norway, Denmark, India, West China, Japan, Palestine, and Madagascar. Quaker missions influence thousands in Africa and Central America.

Twelve countries were represented at the first meeting, in Denmark in Sept 1938, of the World Consultative Committee appointed by the Friends World Conference at Philadelphia in 1937.

While emphasis is increasingly laid on the building up of a strong spiritual life in the Society, outward expressions of Quakerism more readily lend themselves to record. In Great Britain, Friends have taken a leading part in allotment and other work for the unemployed, in penal reform and similar activities, in education and in peace work There are five Quaker M P s. The third decennial conference of Quaker employers took place at Birmingham in April

In the U.S.A , the various "branches" of the Society co-operate through the American Friends Service Committee in work camps in distressed areas, peace work, etc. With British Friends, the Committee is responsible for the Quaker centres in European cities and in the new centre being established at Shanghai. British and American Friends have joined in relief work for both sides in Spain and for non-Aryan and other refugees from Central Europe.

In November the largest "Yearly Meeting" in the history of British Friends declared: "We have re-affirmed the testimony of our Society against all war for whatsoever purpose and have determined to make that testimony our own to-day". (*See* PACIFISM; also A. Neave Brayshaw *The Quakers, their Story and Message*, 1938.) (H. W. PE.)

FROBENIUS, LEO, German morphologist and explorer, was born in Berlin on June 29, 1873, and died at Biganzolo on Aug. 9, 1938. Having founded in 1904 the German Central African Research Expedition, he made between that year and 1915 seven journeys, in which he explored the Congo Basin, the Upper Niger, Togoland, the Northern Sahara, Western Sudan, El-Obeid, Algeria



Associated Press]
DR. LEO FROBENIUS

and Tunisia, Turkey, and Northern Abyssinia. In 1924 he founded the Institute of Cultural Morphology at Frankfort-on-Main. In 1928 he visited the Zimbadwe ruins in Rhodesia, and formed the opinion that these were the remains of an outpost of Sumerian culture. In 1934 Dr. Frobenius explored some of the remotest districts of the Sahara. Later he became director of the Racial Museum at Frankfort. His publications include *Indian Journey*, a study of the connexion between South African and Indian civilization, based upon the author's expedition to India, and *Atlantis · The Folk-Tales and Poetry of Africa*, 12 vols., 1930.

FRUIT PRODUCTION. Frosts in May 1938 throughout Europe caused much damage to the fruit blossoms and the resultant crops were small. Certain apple varieties, such as Worcester Pearmain, Laxton's Superb, Lord Derby, and Grenadier, appeared to have some powers of resistance, whilst Bramley's Seedling and Cox's Orange proved very susceptible. Orchard heating was only partially successful, and the smoke from the oil heaters became a public nuisance. Some good crops were gathered in orchards in favoured sites, or where bees were used for pollination purposes. The study of the occurrence of frost pockets, and methods of orchard heating are now the subject of research at the Fruit Research Station, East Malling, Kent.

Marketing. In England the formation of small groups for marketing purposes (see *Ency. Brit. Book of the Year*, 1938) was further developed during the year by the formation of a marketing group in Worcestershire and another in Kent. Large packing-houses and stores have been erected in Kent and Essex.

New Planting. New plantings in England are confined to dessert apples and dessert plums and pears. At present only about twelve per cent of the pears are home grown and an expansion of the home industry is desirable and possible. Varieties planted include Laxton's Superb (early), Williams Bon Chretien, and Conference. Research work has yet to indicate precisely the most profitable stocks for pears and also the more efficient sprays.

The National Fruit Trials, Wisley, England, have shown the merits of such new dessert apples as Lord Lambourne, Ellison's Orange, and Laxton's Superb, and these with Worcester Pearmain and Cox's Orange Pippin are being planted.

Small Fruits. In all countries many stocks of strawberries are infected with virus disease and give unsatisfactory yields. Schemes are in existence for the multiplication in isolation and distribution to the strawberry growers of proved healthy plants. The English scheme embraces at present Royal Sovereign and Sir Joseph Paxton varieties, raised and distributed by the East Malling Research Station, Kent. Many growers have, however, given over virus-susceptible kinds and have planted kinds that are tolerant —such as Oberschlesian, Tardive de Leopold, Huxley, and Pillnitz. The virus factor is the important one in strawberry culture, and even now is only partially solved. Meanwhile, supplies of fruit are less than the public demand.

Crops of other soft fruits were not satisfactory in Europe in 1938, generally because of frost damage and the prolonged and continuous drought. Cultivated blackberries gave the best crops. The most popular blackberries are Parsley Leaf, the Himalayan Giant (an American introduction), John Innes, and Bedford Giant.

Citrus Fruits. *Grape Fruit.*—In recent years the world's production of grape fruit has increased rapidly, and the increase continues, for the chief centre of production is the U.S.A., though substantial quantities are now raised in Palestine, South Africa, West Indies, and British Honduras. Consumption in Great Britain has risen from 168,000 cwt. in 1925 to 1⅓ million cwt. in 1937: the supplies coming from Palestine (763,000 cwt.); South Africa (206,000 cwt.); West Indies (93,000 cwt.); and British Honduras (7,000 cwt.); substantial supplies are also sent from Argentina, Brazil, Cuba, Portuguese East Africa, and the U.S.A. Experience suggests that this fruit grows best in land adjacent to the sea coast. Supplies to Great Britain are continuous from January to December and the monthly consumption almost regular.

Oranges The United States, Spain, Italy, Palestine, South Africa, and Rhodesia are centres of orange production. None is grown for market in Great Britain. Imports to England in 1937 reached 12½ million cwt., coming mainly from Palestine (4½ million cwt); Spain (3¾ millions); South Africa (2 millions); and Brazil (1½ millions). Since 1910, supplies have much increased from South Africa, Palestine, and Brazil, and declined from Spain and the U.S.A. The oranges from Spain and Palestine arrive from December to May, and those from Brazil and South Africa from June to November Supplies are continuous.

The industries in both South Africa and Palestine are of recent creation. Trees are still young, many having not yet reached the full age of bearing. The area to oranges in Palestine is 300,000 dunums, of which rather more than half belongs to the Jews The Jaffa orange of Palestine is large, oval, and of a distinctive type favoured in the markets: its sweetness and flavour are famed.

A large part of the Union of South Africa has an excellent climate for citrus fruit, and orange soils are found in parts of the Cape, Transvaal, and Natal, near the sea coast. The land is usually irrigated with water. Lack of concentration of the industry has increased the difficulty of preparation and assembly for market.

The South African orange comprises the Washington Newel and the Valencia Late and the Naartjes (tangarine). The fruit before shipment is subjected to a rigid system of government inspection. The trees are still young, and exports should increase.

Bananas. The banana stands third (apples and oranges rank first and second) on the list of the popular fruits of English people, and it is estimated that 15·2 lb. per head are eaten, all of which are imported, the principal sources being the West Indies, 86 per cent; Brazil, 8·2 per cent, and the Canary Islands, 2·1 per cent.

The trade has much altered in recent years. Supplies from Central America and the Canary Isles have declined, and are now not very important, whereas those of the West Indies have shown remarkable development. This success has been assisted by the work of research scientists at the Imperial College of Tropical Agriculture, Trinidad.

Pineapples. For Europe, the most important areas of production of pineapples are the Azores, where fully 75 per cent of the fruits for England are obtained. In recent years South Africa has also developed a trade. The trade in canned pineapples is, however, more important than the trade in raw fruits. Imports of canned pineapples into Great Britain alone exceed a million cwt. annually, and show constant increases. The chief source of supply of canned pineapples is Malaya (over 900,000 cwt.); smaller sources being the U.S.A., Hawaii, and Japan. In Malaya the area planted is over 50,000 acres, the chief areas being Johore, Singapore, and Selangor, and both production and

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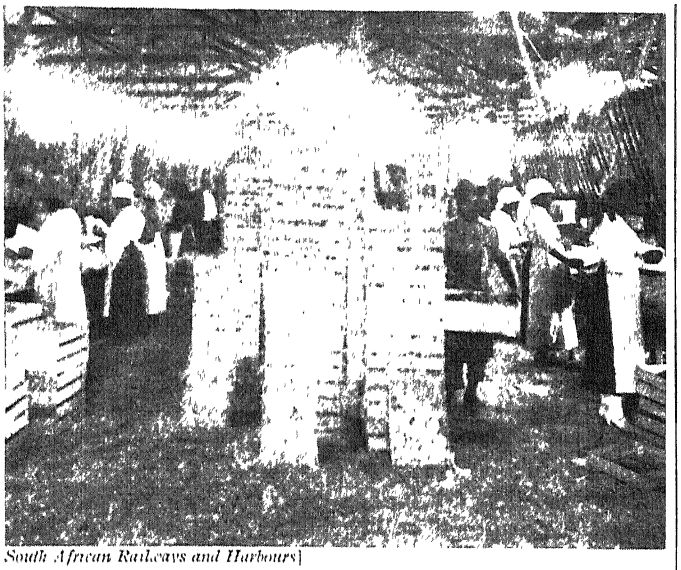
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South African Railways and Harbours]

THE PACKING SHED OF A SOUTH AFRICAN FRUIT FARM

canning is organized by the Chinese. The chief varieties grown are of the Queen type. Labour is adequate and inexpensive and most operations are done by hand.

South Africa. South Africa has now established for itself a fruit industry of real importance. The citrus fruits have been dealt with in the citrus section, but there is an important industry in deciduous fruits—apples, peaches, plums, pears, and grapes. These fruits are gathered towards the end of the year, and are marketed in Europe from December to May, after most of the home supplies have all passed into consumption. Much of this fruit is used in the towns and canning factories of South Africa. The best quality, however, is sent to the English markets. In 1937, the last year for which statistics are available, South Africa exported:

Apples	22,000 cwt.	Peaches	27,000 cwt.
Grapes	176,000 ,,	Pears	140,000 ,,
	Plums 78,000 cwt.		

in addition to 54,000 cwt. of canned and bottled fruits.

The majority of the trees have not yet reached full maturity, and further expansion will undoubtedly be made. This young industry is full of hope.

Fruit Soil Surveys. Successful fruitgrowers have long realized the suitability or unsuitability of different soils for fruit production. This has led to the initiation in many countries of fruit soil surveys, which aim at gaining precise information concerning soils on which fruit is produced and their correlation with either good, moderate, or bad crop performance.

In England reports have been published by H.M. Stationery Office of the Wisbech soils, the Greensands of Kent, the old Red Sandstone of Worcestershire and Hereford, etc., and now the Commonwealth of Australia have published an account of the soil survey of the fruit soils of the Murrumbidgee, *i.e.* areas of New South Wales. In all places the success or failure of soils to produce satisfactory fruits seems to depend more on their types, their depths, and water-holding capacity than on their actual chemical constituents. (H. V. T.)

FUELS: *see* COAL; GAS; PETROL; PETROLEUM; SYNTHETIC FUELS AND LUBRICANTS.

FURNITURE INDUSTRY, THE. Greater activity in most European furniture markets during the early part of 1938 was followed by a reactionary movement. The unsettled international situation reflected seriously on the public purchasing of furnishings, particularly in markets where a large proportion of this merchandise is bought on hire-purchase or deferred-payment terms. In Britain, some eighty per cent of furniture is sold on these systems, and the public were disinclined towards the end of the year to commit themselves to long-term payments which they might not be able to meet in the event of hostilities.

Hungary maintained her lead as the biggest furniture exporter, sending £45,000 worth during the first six months to Britain alone. Poland and Czechoslovakia, specializing in bentwood furniture, had exports to Britain of £42,000 and £24,000 respectively. British exports during this period, however, at £203,285 almost balanced imports at £207,891.

There was a steady change in public taste towards a return of the classic period styles in furnishing. This was particularly noticeable among the younger generation who, tiring of ultra-modern forms, turned to the traditional beauty of the seventeenth- and eighteenth-century styles. This movement had a beneficial effect on the markets, since it tended to make values rise in proportion to the improved craftsmanship necessary in translating period furniture designs. At the other end of the trade, however, values fell considerably.

Slum clearance in Britain had a strong effect on the furnishing industry. New council houses meant new furniture, but a considerable proportion of the new business was lost to the retail trade through municipal authorities buying furniture from manufacturers and supplying their tenants direct.

A new Hire-purchase Act, operating from Jan. 1, 1939, regularizes the system, and will have a healthy effect upon furniture merchandizing methods. (L. L.)

FURS. Generally speaking business in the fur trade in 1938 declined below that of 1937. The London and Paris fur markets were depressed by the political crises. In North America skin prices were lower, having dropped 20 per cent to 50 per cent in the winter of 1937–38. There was slow recovery during the year in the values of certain wanted furs, namely skunk, muskrat, mink, kolinsky, caracul, red fox, and Persian lamb. There was a new demand for novelty furs, such as marmot, guanaco, blue fox, lynx, fitch. Silver fox was a favoured fur, but increased production depressed prices to new low levels. Rabbit fur declined in consumer demand. Short coats of bulky furs were fashionable, and brown or sable shade was a favourite colour. Exports of furs from China declined to about 75 per cent of normal because of the Japanese occupation of that country. The consumption of Russian furs was well maintained in the European and American markets, but was somewhat less than in 1937.

Russia, Canada, Australia, and England are the chief countries supplying the United States with furs. The Anglo-American trade agreements reduced the import duty on silver fox from 50 per cent to 37½ per cent and the duties on dressed furs, with certain exceptions, from 25 per cent to 15 per cent and on dyed furs from 30 per cent to 20 per cent. These lower duties applied on all "most-favoured-nations" agreements.

During the year about 400,000 ranch-bred mink skins were produced in the U.S.A. and Canada, a gain of 25 per cent over the previous year and the highest on record. World silver fox production reached the 1,000,000 skins mark.

G

GAMBIA, THE. The Gambia consists of the Colony and a Protectorate of four provinces The people are largely dependent upon the export of ground nuts, which form 95 per cent of the export trade The Colony is faced with a trade recession as compared with 1937, and efforts are being made to develop the export trade in hides, palm oil, and other products. The eradication of rinderpest is assisted by the Colonial Development Fund. In 1938 an air service started between Bathurst and Freetown The Colony is unhealthy. A hospital costing £20,000 was opened in April, and a comprehensive drainage scheme is under consideration for Bathurst. (J. L. K.)

Area and Population :
Area 3,999 sq miles.
Population (est. Dec. 31, 1936) 190,739.
Governor. Sir Wilfred Thomas Southorn, K C M G.
Production 1937 (export figures) :

Ground nuts	66,576 tons
Palm kernels	861 ,,
Beeswax	35,424 lb

Overseas Trade 1937 :
Imports : merchandise, £705,165 ; bullion and specie, £96,551.
Exports . domestic merchandise . £665,00
Re-exports : merchandise, £34,148 ; bullion and specie, £10,912.
Communications 1937 :
Roads : trunk, 178 miles ; secondary, 691 miles.
Shipping, tons net : entered, 652,746 ; cleared, 651,525.
Finance :

Revenue (1937) £286,104	(est. 1938)	£236,038
Expenditure ,, £343,322	,, ,,	£241,441
Public Debt (Dec. 31, 1937)		£38,760

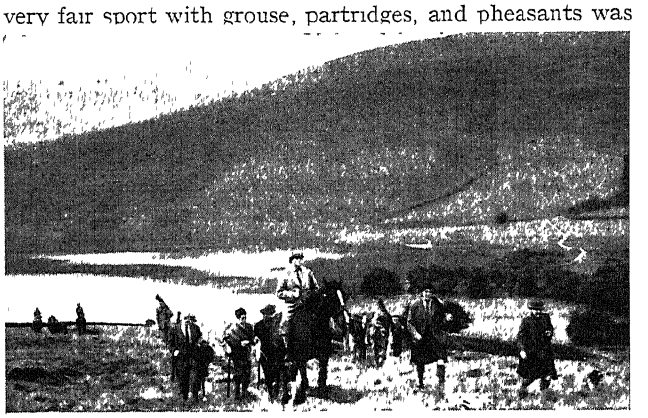
Education 1937 :
Elementary : schools, 14 ; scholars, 2,198.
Secondary : ,, 5 ; ,, 201.

GAMELIN, MARIE GUSTAVE (1872–), French general ; born in Paris, son of a general, he was educated at St. Cyr, was chief of staff of General Joffre in 1914, played an important part at the battle of the Marne, and was promoted general of brigade and commander of a division in 1917. After the War he was head of a military mission to Brazil until 1925, when he was appointed commander of the French forces in the Levant. He became chief of the general staff in 1931, inspector-general and vice-president of the higher council of war in 1935, and in 1936 went to Poland for discussions with General Śmigły-Rydz. In Jan. 1938 he was nominated supreme commander of all French forces. In that capacity he was responsible for the partial French mobilization that took place in September during the German-Czech crisis when, in a report to the prime minister, he expressed the view that France, despite several shortcomings in her military preparedness, should intervene. He accompanied MM. Daladier and Bonnet to London during that crisis and held conversations with the British general staff. On the occasion of the Paris visit of the British Sovereigns in July, General Gamelin received the G C.V. O.



Central Press Photos]
GENERAL GAMELIN

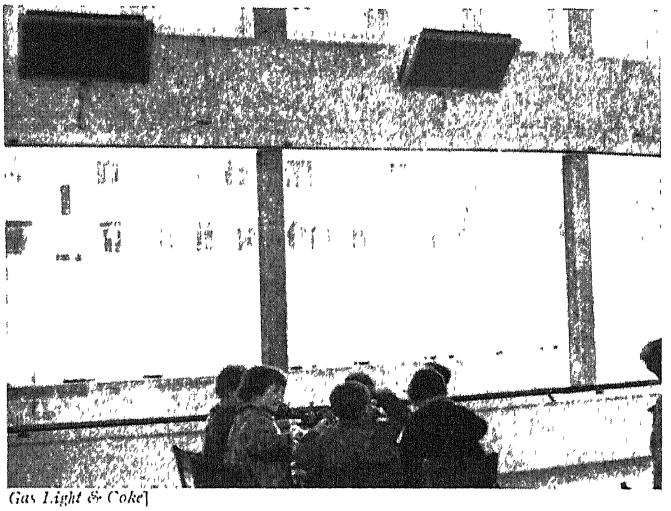
GAME SHOOTING. While, as far as the British Isles are concerned, there is nothing outstanding to report regarding the 1938–39 season, it can be said that some very fair sport with grouse, partridges, and pheasants was enjoyed. The exceptionally fine weather in March induced early laying, and many broods were too far advanced to be adversely affected by the inclement weather which was experienced later in the year. In wildfowl and rough shooting, though ducks were generally scarcer, geese seemed to frequent the shores of Britain in undiminished numbers ; and rabbits and pigeons were again sufficiently numerous to be considered a nuisance in many districts. The Scottish deer-stalking season produced some respectable " heads ", especially in forests where winter feeding was practised. In some European countries considerable attention has been given to methods of preservation, and in Egypt the value of duck shooting as a tourist attraction is being more fully recognized. (W. H. T. L.)



Fox Photos]
A SHOOTING PARTY ON A SCOTTISH GROUSE MOOR

GANN, THOMAS (WILLIAM FRANCIS), British explorer, was born at Murrick, County Mayo, in 1868, and died in London on Feb. 24, 1938. Educated at the King's School, Canterbury, and the Middlesex Hospital, London, he was in charge of the expedition sent to relieve sufferers from the Guatemala earthquake, and later was chief medical officer in British Honduras. As a keen archæologist, his explorations enabled him to locate several centres of the ancient Maya civilization ; and he lent his experience to the expeditions sent to British Honduras by the British Museum in 1926 and 1928. Among his many publications were *Maya Cities—a Record of Adventure and Exploration in Central America* and *Mystery Cities of Honduras*.

GAS. The part that the production and utilization of gaseous fuel plays in the social and economic scheme is receiving yet closer attention in many quarters, and the importance of a rational utilization of fuel resources is becoming more widely recognized. In Great Britain emphasis is placed upon the betterment of living conditions



Gas Light & Coke]
OVERHEAD RADIANT PANEL HEATER AT KENSAL HOUSE NURSERY SCHOOL, LONDON

which is made possible by the wider use of coke and gas, the products of coal carbonization, and particular interest is being displayed in the possibilities of developing the use of these fuels as a means of removing the smoke nuisance. Conservation of coal supplies and the production of important raw materials for industry are incidental advantages to which increasing recognition is being given. The contribution made by the carbonizing industries to the national requirements of motor fuel amounts to some four per cent of the total quantity used, and the gas industry is giving thought to the possibility of increasing this figure by modified methods of coal processing. Natural gas forms nearly eighty per cent of the total gas sold in the United States of America, and the rapidly growing use of gaseous fuel in that country is attributable to its great convenience and efficiency in use, but there are those who would draw attention to the limited life of this source of fuel supply and point out the importance of maintaining and developing the manufactured gas industry. In Germany the development of the gas industry is a concomitant of the great efforts being made to expand the output of iron and steel. The erection of new coking plants is making more gas available and industry is absorbing almost the whole of the increase.

The political and economic arguments which would favour the extension of the activities of the gas-producing industries are of little interest to the public in general, the individual members of which are more directly concerned with the comfort and convenience which gas service can bring them. This fact is well recognized by the gas supply industries, and large changes have been made in the design of appliances with the object of making them more efficient, not only thermally but also in the performance of their particular duty, and more attractive. Increased importance is being attached to uniformity in performance, and this necessitates more careful standardization both of the appliances and of the quality of the gas supplied. Gas quality, in its modern sense, refers to much more than the calorific value alone, and it is recognized to-day that satisfactory performance requires control of the calorific value, the specific gravity, the air requirements, and the speed of flame propagation in admixture with air. In the United States of America the tendency is to judge the combustion characteristics of a gas by calculation from measured physical properties, but in Great Britain and Germany there have been introduced test burners intended to give direct measurement of the resultant of the various factors involved. The matter of safety of appliances in use continues to receive the most careful consideration, and increasing care is taken to make appliances safe by design rather than to rely upon the reasonableness of the user In this connexion the British Standards Institution has issued specifications for combustion standards with which gas appliances should comply, and for bafflers and flue-pipe terminals used in connexion with gas appliances.

Reviewing the more obvious changes which have taken place in domestic gas appliances during recent years, it is notable that cookers show greater speed in boiling and in grilling, while the thermal efficiency of the oven is distinctly higher It is now customary for all but the lowest-priced cookers to be provided with oven thermostats, and safety taps are coming into general use By the wider use of vitreous enamel and by ingenious design, their appearance has changed to conform with the most up-to-date conceptions of neatness and cleanliness

Water-heating appliances show an equally striking advance, and the term "geyser" is no longer applied to the modern instantaneous water heater These heaters are made to supply hot water either at one or at a number of points and are fitted with automatic controls on both the water flow and the pilot jet An interesting recent development is an instantaneous heater which supplies, at will, warm, hot, or even boiling water. There has been an equally great advance in the storage type of water heater, and the numerous designs available range from small storage heaters for the sink or wash-basin to the large appliances employed for heating the circulated water of swimming-pools.

Space heating, or house heating, forms one of the major undeveloped markets for gaseous fuel, and in both Great Britain and the United States of America efforts are being made to develop this field. Climatic differences make a difference to the type of appliance required, and while central heating boilers or air heaters are in demand in America, the radiant gas fire predominates in Great Britain. Close study of requirements has resulted in fires which give a far higher degree of comfort with a high thermal efficiency, while self-lighting devices and coloured finishes add their attraction. For public buildings and factories, overhead radiant heaters and air heaters are gaining in popularity and, in Great Britain, gas lighting in factories justly retains favour partly on account of the useful heating effect which it provides.

The direction in which the greatest expansion in gas sales is taking place generally is the use of gas for industrial furnace work. The rapid developments in this field have necessitated an intensive study of combustion conditions, refractory materials, and furnace atmospheres, and a vast amount of experience has now been gained and is being applied in multitudinous processes.

See Amer. Gas J., cxlviii, No. 1, 15; No. 6, 37; *Inst. Gas Eng. Commns.*, 158, 166; *Gas-und-Wasserfach*, xv, 250. (E. V. E.)

GEMS AND PRECIOUS STONES: *see* MINERALOGY

GENETICS. In the field of human heredity an important advance in the analysis of mental defect is made in the British Medical Research Council Report by Dr. L. S. Penrose of his six-year study of 1,280 patients of the Eastern Counties Hospital and their families. The overwhelming importance of hereditary factors is made plain, but the importance of various non-hereditary influences, particularly in determining the degree of defectiveness is also clear. There is evidence of both dominant and recessive genes and also multiple factors, or else fluctuating dominance, being involved in various cases. Relatives of moderately sub-normal patients are very often of similar

grade, as expected if the condition is due to multiple or incompletely dominant genes, whereas idiots and imbeciles are more apt to come from normal parents, as expected if they are due to single recessive genes or new mutations. A great excess of defective mothers relative to defective fathers of defectives is noted, and a slight similar tendency for grandparents. This is interpreted as a non-genetic difference due to non-random sampling.

Applied Genetics. Recently Goodale[1] has shown by mouse experiments that selection by the progeny-test method may have far greater possibilities than is commonly recognized for animal breeding in general. Starting in 1930 with a commercial strain of rather large albino mice he has used as parents in his selected strain those mice which, regardless of their own size, have, in a preliminary mating, produced larger offspring. In twelve to sixteen generations he has increased the average weight by about forty per cent and the increase is still continuing

In a recent arresting address[1] the United States Secretary of Agriculture, H. A. Wallace, discussed breeding principles that have emerged from genetic studies of maize and indicated their significance for farm-animal breeding in which genetic analysis is necessarily slower. The highest yields of maize are obtained from seed produced by crossing rather widely different strains that have themselves been inbred for many generations. The wider extension of this principle to animal breeding is now being urged Before the genetic effects of inbreeding and outbreeding were understood this practice was a dangerous one as the important differences between "top-crossing" and random crossing were rarely fully realized. If it now becomes a general practice, extensive dissemination of the salient genetic facts to breeders and farmers in general will be necessary. The United States Department of Agriculture has made notable contributions to this end in its last two year-books. Important changes in show-ring standards will also be involved.

Physiological Genetics. Goldschmidt's *Physiological Genetics* is the first extensive work of its kind in English It lays a foundation for studies in this rapidly expanding field. Kühn, Beadle, Ephrussi[2], and others have obtained further knowledge of gene action and tissue interrelation through transplantation experiments in the flour moth Ephestia and in Drosophila. Willier, Rawles, Reed, Danforth, Twitting, and others have done similar work on mammals and birds. Wettstein and Went are applying to plants the physiological methods previously limited to animals. Oehlkers and his students have made further important contributions to the physiology of meiosis.

General Genetics and Cytogenetics. Of the numerous advances only a few can be mentioned. McClintock has published exhaustive analyses of the behaviour of ring chromosomes, and of fragmentation in maize. Sax has made an analysis of X-ray effects on Tradescantia which shows clearly that X-rays are too crude a tool for the final determination of the number of longitudinal divisions within a chromosome. The differential effect of ultraviolet and X-radiations of diverse lengths has been shown by Stadler. Spermatocyte chromosome pairing without chiasmata and in the absence of somatic pairing has been demonstrated in a mantid by White. From numerous studies it has become clear that genetically inert parts of chromosomes have generalized instead of specific pairing capacities. Kuwada, Matsuura, Huskins, and others have continued their observational-experimental studies of the spiral structure of chromosomes. Berger[1] has shown that somatic multiplication and reduction of chromosome sets is correlated with metamorphosis in mosquitoes, and Love has found abnormal somatic reduction occurring in hybrid wheats. A second edition of Darlington's *Recent Advances in Cytology* records primarily the great extension in cytogenetic theory and hypothesis achieved by the deductive method Dobzhansky and Queal have analysed chromosome variation in populations of *Drosophila pseudoobscura* inhabiting isolated mountain ranges and have found three inversions within the third chromosome to be present in every population. The method of analysis provides an unusually reliable criterion of relationships. Babcock, Stebbins, and others have made further cytosystematic analyses of Crepis, Pæonia, and Youngia. E. G. Anderson has begun publication of extensive experiments on translocation in maize. S. Emerson has shown that self-incompatibility in *Oenothera organensis* is governed by a series of alleles similar to those determined by East for Nicotiana. Studies of the fungus Neurospora by Lindegren continue to show the occurrence of "chromatid interference" in crossing-over Contributions to theories of natural, artificial, and sexual selection have been made by Wright, Fisher, Haldane, Sturtevant, Huxley, Mather, and others. Sturtevant's "On the Effects of Selection on Social Insects"[3] warrants consideration by sociologists. He shows that selection operates on at least three different levels · "On the individuals, on the colonies, and on the population within an area". Selection acting on man is certainly not less complex. A symposium on the mechanism of evolution was held during the B.A.A S meeting at Cambridge[4]. A recent special issue of the Indian journal *Current Science* was devoted to genetics. The genetics of Drosophila, particularly through salivary gland studies and irradiation, has advanced so extensively that no brief account can be given. Amongst numerous studies on the genetics of disease resistance Wellhausen's demonstration that the virulence of the Phytomonas bacteria is changed when they are grown on inbred lines of maize varying in susceptibility or resistance may be cited. Stubbe has published the first section of a comprehensive *Handbuch* on gene mutation. Correns' last work, a *Handbuch* on plasmatic inheritance, has been edited and extended by von Wettstein. (C. L. Hu.)

Bibliography. [1] *Journal of Heredity*, vol xxix (1938); [2] *American Naturalist*, vol. lxxii, 5–23 (1938); [3] *Q. Rev. Biol.* vol. xiii, 74–76 (1938), [4] *Nature*, vol. cxlii, Supplement, 514–16 (1938); Sinnott and Dunn, *Principles of Genetics*, 3rd ed. (1938).

GEOLOGY. The geology of over nine-tenths of the earth's surface is now known in at least broad outline, and the regions concerning which we have little or no accurate information and no geological maps are becoming relatively few. If we exclude the polar ice-covered areas, these unknown territories include principally the great central desert of Australia; part of the interior of New Guinea and Borneo; the highlands of Abyssinia and much of adjacent British Somaliland; the Rio de Oro coast of West Africa; and, in Asia, the northernmost part of Kamchatkan Siberia, part of Afghanistan, large regions in western Mongolia, and about three-quarters of the Himalayan ranges in India and Tibet. Much recent work on the Kashmir, Simla, and Garhwal Himalayas has been executed by the Indian Geological Survey, who find in these regions great *nappe* structures on the plan of those of the Alps. Himalayan tectonics, however, appear generally to be simpler than Alpine, despite the much more tremendous scale of the structures involved. A full review of these and other investigations on the tectonics of the Himalayas and the

north Indian foreland is given by Wadia in his presidential address to the geology section of the 25th Indian Science Congress (Calcutta, 1938). Other considerable advances in Asiatic geology are seen in the reports of the Sino-Swedish expeditions to the north western provinces of China (1927-33) under the leadership of Sir Sven Hedin. These monographs describe the geology of western Qurug Tagh (Eastern T'ien Shan) and the late palæozoic rocks of Tun Huang. Valuable compilations on African geology by Hennig, Krenkel, and Haughton have also appeared during the year. Progress in the other unmapped areas previously mentioned is naturally slow, and although every year some 8,000 geological pamphlets, books, and maps are received in the main European and American libraries, almost the whole of this vast literature is concerned with the geology of civilized lands. Some of the more important advances are noted below.

Stratigraphical Geology. With increasing stratigraphical knowledge, it would seem that major transgressions of strata, indicated by progressive overlap, occur at essentially synchronous stratigraphical levels in all the continents, while major regressions are also of fundamentally concurrent occurrence throughout the world. In other words, throughout geological time there appears to have been a rhythmic rise and fall of sea-level, due, perhaps, to a rhythmic oscillation of the sea-bottom. This doctrine, that of the Pulsation Theory first postulated at the International Geological Congress at Washington in 1933, is in direct contrast to the orthodox and hitherto widely held hypothesis of oscillation, according to which the movements of the continental land-masses are more or less localized. In support of the Pulsation Theory and in explanation of its repercussions on tectonics and palæontology, a very full study of the Lower Palæozoic geosynclines throughout the earth has been commenced by Grabau, whose compilations include much information on the geology of remote areas, particularly of western Asia, not hitherto available in European languages. Whatever the outcome of the hypothesis, these must now form a standard reference work for stratigraphers.

Physical Geology. In the field of physical geology one of the foremost present-day problems is that of soil erosion. Following upon over-intensive agriculture, some 900 million acres in north-western and north-central United States have become almost wholly denuded of any topsoil, forming the region commonly known as the Dust Bowl. Similar or closely related problems are being faced in South Australia, India, the French Sudan, Kenya, Nigeria and other African colonies, and much co-operative investigation is presently being carried out by the geologists, pedologists, and agriculturists of the countries affected.

In glaciology, the outstanding advance of the year has been the publication of the investigations in the Karakorum and neighbouring mountain ranges carried out by four Dutch expeditions from 1922 to 1935. The glaciers of the Karakorum, many of which were hitherto unknown, cover an area of close on 14,000 sq. kms., and the scale of the phenomena studied can only be surpassed in Polar regions.

Economic Geology. More geologists are engaged in the exploitation and exploration of oilfields than in any other branch of the mining industry; and these, as well as students of general economic geology, will find of outstanding interest a recent compilation by 316 authors on the science of petroleum. This work of over 3,000 pages includes much new information on the structure and stratigraphy of the oil-belts of the world, written by the leading geologists in these fields; and it summarizes the complex modern methods of geological and geophysical prospecting used in oil exploration. Throughout the world this exploration is being carried on, with increase of boring technique, at ever-increasing depths, and early in 1938 there was completed the deepest bore yet drilled in the earth's crust—a depth of 15,004 ft., at a site in the San Joaquin valley, California. Borings over 10,000 ft. in depth are now common in many oilfields, and from these much new information on geothermal gradients in various geological formations and structures has become available. Within the British Empire geological surveying for oil is being expedited in Australia, New Guinea, Papua, Uganda, and elsewhere, without as yet much pronounced success, while in Great Britain prospecting by various companies under the Petroleum (Production) Act, 1934, has not yet yielded oil in commercial quantities, though an extensive gas field has been discovered in the Lothians.

The development within the past few years of an extensive deposit of pitchblende, on the shore of Great Bear Lake, Canada, some forty miles south of the Arctic Circle, is of international importance. The area is part of the great Pre-Cambrian Canadian Shield, and the radium-uranium ores are associated with a rich silver mineralization. This is the first major discovery of pitchblende since the domination of the world's radium supplies by the Belgian Congo deposits, beginning in 1923, and by increasing geological and technological development, carried on despite climatic difficulties, the Canadian output has led to a fall of at least 25 per cent in the world price of radium. Production in 1938 was expected to yield 85 grams of radium, which is 15 per cent of the radium known to be in use throughout the world.

The exploitation of olivine or olivine-rock (dunite) during 1938 introduces a new mineral to the field of the economic geologist. Hitherto olivine, when not of gem quality, had no commercial value; but it is now employed both in Europe and America in the manufacture of forsterite bricks which, because of their high melting-point (over 1,850° C.) and other physical characteristics, are eminently suitable for many refractory purposes. (C. F. D.)

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GEORGE VI (1895–), King of Great Britain and Ireland; second son of King George V, he married Elizabeth, daughter of the Earl of Strathmore, K.G., on April 26, 1923, and ascended the throne on Dec. 11, 1936 (see *Ency. Brit. Book of the Year*, 1938, p. 278).

His Majesty fulfilled many State engagements during 1938, of which the most important was his visit, accompanied by H.M. the Queen, to the French capital in July. Originally fixed for the end of June, the visit was postponed on account of the death of the Countess of Strathmore, Her Majesty's mother, on June 23, and it took place amid scenes of great enthusiasm from July 19 to 22. At the commencement of the visit their Majesties witnessed the unveiling by Marshal Pétain and F.-M. Lord Cavan of the Britannia monument erected on the mole at Boulogne in honour of the British troops landing there during the World War, and at its close the King unveiled the Australian War Memorial at Villers Bretonneux. Other state functions included in-

vestitures in February and July, levees in March, and Courts in May and July, the opening of the Empire Exhibition at Glasgow on May 3; a visit to the Home Fleet in June, and the launching of the "Queen Elizabeth" on the Clyde on Sept 27, though this ceremony was carried through by the Queen alone, the King's presence not being possible owing to the international situation



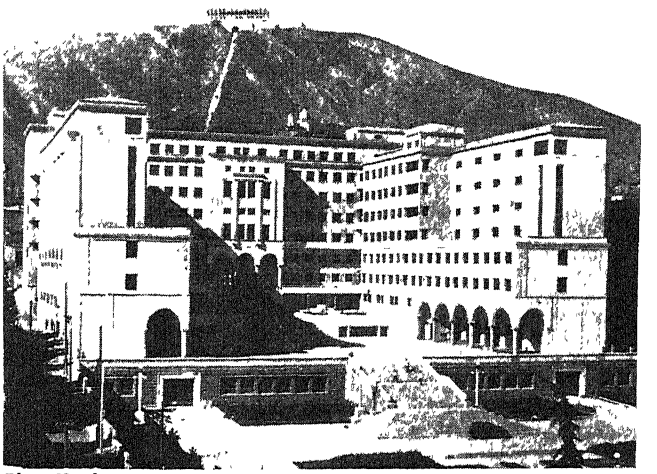
Topical Press]
HIS MAJESTY KING GEORGE VI

His Majesty again on numerous occasions showed his great interest in the welfare of his people. On Feb. 17 he inaugurated, by means of a speech broadcast from the Guildhall, the National Fitness Campaign; in March he visited "shadow" factories in Birmingham and Coventry and housing estates in South and East London; he held an inspection of King's Scouts at Windsor Castle in April, and after the opening of the Glasgow Exhibition toured the mining and working-class districts of the Clyde, later in May making a four-days' tour of the Lancashire towns. A slight illness in July prevented his opening the new hospital centre at Birmingham (a duty performed by the Duke of Gloucester), but he had recovered by the time of the Paris visit; and thereafter had a holiday in Scotland, spending one day—as is his annual custom—at his boys' camp at Southwold. The September crisis caused a break in his holiday from Sept. 14 to Oct. 2, when he was in London; and soon after his final return he received the governing body of the International Labour Office (Oct 24) and opened at Norwich the new City Hall (Oct. 29).

The King's interest in sport was well exemplified by his attendance at the Derby, Ascot, the Braemar Games, the Cup Final at Wembley and other football matches on his various tours, and by his presenting the prizes to the London Federation of Boys' Clubs' boxing champions on March 2 at the Albert Hall.

It was announced in February that His Majesty's visit to India for a Coronation Durbar was at present in abeyance, and in October that he and the Queen would spend three or four weeks in Canada, and visit the United States, in the summer of 1939.

GEORGIAN S.S.R. On June 12, 1938, the elections to the Supreme Council of this Republic of the U.S.S.R. took place, at which 99·2 per cent of the electorate recorded their votes. In the capital, Tbilisi, the percentage is said to have reached as high as 99·9. The result was that 237 candidates from the communist and non-party *bloc*, 59 of whom were women, were elected. At the first session of the Council in Tbilisi, from July 8 to 11, after exhaustive discussion and criticism of the individual branches of administration, the new government of the Republic under Valerian Bakradze was formed. The purge of the Republic from the alleged wreckers and saboteurs was continued



Planet News]
TBILISI PALACE OF THE GOVERNMENT

in 1938. In February, for example, several veterinary surgeons were sentenced to death and others given long terms of imprisonment for infecting and poisoning cattle in order to kill troops and civilians It is said that 90,000 head of cattle have been destroyed by them since 1932.

Area and Population:
Area 27,027 sq. miles.
Population (1936) 3,232,000 (Georgians 68 per cent, Armenians 11·6 per cent, workers and employees 342,031, of whom 57,885 worked in heavy industries, with average yearly income 3,015 roubles).
Leading Cities (1936 populations) · Tbilisi (the capital, formerly Tiflis) (445,100), Batumi (*c* 100,000), Kutaisi (72,300), Poti (21,000).

Languages: Georgian, Armenian, Abkhazian, Ajarian, Osetian, Russian.

Economic Life 1937:
State farms, 338; machine and tractor stations, 44; tractors, 2,527.
Sown area, 2,106,527 acres, tea plantations, 108,724 acres (output 27,222 metric tons); tobacco plantations, 54,362 acres, citrus plantations, 15,620 acres (crop 300 million fruits); vineyards, 104,864 acres; horses, 164,900; cattle, 1,824,600; goats, 493,400; pigs, 895,700; sheep, 1,621,300.
Industrial output, *c.* 900 million roubles.
Power capacity, 147,000 kwh.; output of electric power, 471·7 million kwh.
Budget (1938) 1,069 million roubles
Invested in road construction (1928–37), over 337 million roubles.

Cultural Life 1937:
Education: expenditure, 400 million roubles; elementary and secondary schools, 4,249 (660,284 pupils); higher educational institutions, 19 (*c.* 22,000 students); technical colleges, 200 (32,373 students); workers' faculties, 21 (4,528 students).
Museums, 28; libraries, 1,326; theatres, 40; cinemas, 487; daily newspapers, *c.* 100; books published (1935–37), 1,113 (over 15,000,000 copies). (S. YAK.)

GERMAN LITERATURE. It will be evident from the present survey that, though Germany is no more self-sufficient in the literary than she is in the economic sphere, yet in some directions she has during 1938 gone her own way. Official criticism is directed to definite aims: to further the consciousness of race, of mutual solidarity, family tradition, historical continuity, and pride in the greater Germany. There is a revulsion of feeling against "decadent tendencies" like those apparent in the works of

Thomas Mann, and the internationalism and pacificism of the Expressionists are things of the past. The domestic virtues are to the fore woman is wife and mother rather than mistress; and man, if no longer clothed in field grey, takes a manly, not to say an heroic, view of life The ideal is "a poetry born of strength and faith", and modern Germany has turned her back on the liberal, individualist, rational view of life bequeathed from the French Revolution, in order to glorify the romantic notions of instinct, faith, and feeling. Unfortunately, modern romanticism lacks the "irony" so distinctive of that former brilliant epoch of German letters, that saving grace of humour which enables a man and a nation to rise superior to themselves, whether in transitory setback or permanent success. The earnest note which predominates in all the creations of the German mind tends to pall on those who do not subscribe to the Nazi way of life.

Whereas in France and England the novel has lost in prestige as it has increased in popularity, in Germany they still speak of it as "an epic poem", and describe its author as a "Dichter". Of the half-dozen outstanding German novels of 1938 there is scarcely one which has not a serious purpose more or less clearly expressed.

Pride of place undoubtedly belongs to *Das gottgelobte Herz*, of E. G. Kolbenheyer (Langen-Muller), both by reason of the author's leading role among the writers of modern Germany and because of the weightiness of its contents. It treats with complete poetic mastery of the dedication of a German nun of the fourteenth century to the service of Christ. As a former novel had culminated in the mystic vision of Böhme in *Meister Joachim Pausewang* (now available in a masterly English rendering as *A Winter Chronicle*), so now the threads of this novel all lead to the central figure of German mysticism, Meister Eckhart, who is revealed as the first German Protestant in spiritual conflict with the French pope of Avignon. There is no doubt of the author's sincerity and capability, but the reader is likely to find greater enjoyment in the stirring events of the first half of the novel than in the mystic outpourings of the second.

The theme of the second great novel of the year, Ina Seidel's *Lennacker: Das Buch der Heimkehr* (Deutsche Verlagsanstalt), is the continuity of life through the family. A young demobilized officer spends the Christmas of 1918 with an aged aunt, the superior of a Protestant convent. He falls ill, and his fevered brain has twelve visions of his ancestors who, with one exception, have all been Protestant pastors. It is a relation of moving episodes told without trace of sentimentality and informed by genuine feeling and pious reflection, based on those Protestant traditions which have always provided German literature with its most precious inspiration.

It is a steep descent from these heights to the pedestrian, if competent, work of less-inspired writers. Most of them have open or hidden propagandist intentions: H. F. Blunck's historical (or rather pseudo-historical) novel *Wolter von Plettenberg* (Hanseatische Verlagsanstalt) is a glorification of the German Order against the superior might of the Russian Tsar. Werner Beumelburg's *Der König und die Kaiserin* (Stalling) emphasizes the tragedy which drove Frederick the Great and Maria Theresa, both ardent patriots, to oppose one another in disastrous wars. Gertrud Bäumer, in *Der Berg des Königs* (Bruckmann), seeks to clear the Lombards of the charge of barbarism which historians have fastened upon them. Heinrich Zillich lays the rather commonplace plot of *Der Weizenstrauss* (Langen-Müller) in his native Transylvania, but fails to repeat the success of *Zwischen Grenzen und Zeiten*. E. Wittstock also chooses Siebenburgen for the setting of a collection of humorous tales—... *Abends Gäste* (Langen-Muller), but their ponderous jesting will not be to everybody's taste The cause of the South Tirol is kept discreetly alive by *Das Sterhorn* of J G. Oberkofler (Diederichs), a quasi-religious avowal of belief in race and home. *Der Weg der Anna Illing*, by Emil Merker (Diederichs), symbolizes in the sufferings and sacrifice of an individual the devotion of the Sudetendeutschen to the cause of the greater Fatherland

The foreign reader turns with relief from these officially sponsored productions to the frank sentimentality of *Die Mutter*, by Ottfried Graf Finckenstein (Diederichs), and accepts it as a true picture of conditions in East Prussia during the inflation period. In *Die Verlobten* (List), Margarete Schiestl-Bentlage unravels the complicated relations of six peasant families of her native Westphalia. *Der Steinbruch* (Langen-Muller), by Joachim von der Goltz, tells a straightforward story of guilt and expiation against a background of Black Forest uplands. Gertrud von Le Fort invests the horrors of *Die Magdeburgische Hochzeit* (Insel-Verlag) with purely human interest. Nor have the short stories of G. Britting, *Das gerettete Bild*, or of P. Alverdes, *Die Verwandelten* (both Langen-Müller), any ulterior motive beyond delighting the reader with their skilful telling

How far does the German public read what it is told? Official critics complain that the bookshops still "overflow with foreign rubbish", and *Gone with the Wind* and *The Citadel* have probably found as many readers in their German translation as all these orthodox novels put together. As in the West, biography and memoirs occupy a large place in popular estimation: Isolde Kurz, *Die Pilgerfahrt nach dem Unerreichlichen* (Rainer Wunderlich) is a good example of the first; Fritz Pick's adaptation of Sir Austen Chamberlain, *Englische Politik* (Essener Verlagsanstalt), is typical of the interest which is accorded to all things English.

National-Socialism is particularly concerned at its failure to inspire a really first-class dramatist. Of all the institutions in the new Germany the theatre has changed least, and the public still insists on being amused. In the serious theatre the historical drama is still to the fore, with Napoleon and Frederick the Great almost equal in popular favour. Many competent plays by reputable authors (Blunck, Rehberg, Frenssen, von Trotha) pass over the stage, but leave no permanent trace behind. German critics are unanimous in acclaiming *Der Hochverräter*, by Curt Langenbeck (Langen-Müller), as the play of the year; but English-speaking readers will not readily accept his idea of an American "Volksstaat" united under the sovereignty of the English king. So far dramatists have been content to exhibit the national resurgence symbolically through the past, and none has succeeded as yet (as Kolbenheyer has in the novel) in creating a dramatic record of a Greater Germany. Perhaps Shakespeare (who is as popular on the stage as ever) satisfies German aspirations in this respect. And again, well-tried foreign plays, Shaw's and Wilde's, render superfluous attempts at literary comedy like *Das Meistermädchen* of von der Goltz (Langen-Müller).

Even the lyric is not entirely free from extraneous influences. Josef Weinheber's new volume, *Zwischen Göttern und Dämonen* (Langen-Müller) is inspired by an heroic conception of life which will not appeal to the more indulgent. But the most captious critic will have no fault

to find with the form of these forty monumental odes. Gerhard Schumann is a prominent member of the Party, and his verse is tinged by political considerations. The title, *Schau und Tat* (Langen-Muller), indicates that poetry implies no idle contemplation of life but a call to action. Anthologies of patriotic verse have been published by Staackmann in Leipzig, *Das Reich*, and Diederichs in Jena, *Dom aller Deutschen*.

A very different spirit animates the poetry of Hermann Claudius, and *Jeden Morgen geht die Sonne auf* (Langen-Muller) makes the eternal appeal of nature revealed as the "living garment of God". Ruth Schaumann, in *Der Siegelring* (Grote), has again proved herself a skilful painter of moods and fancies Wilhelm Pleyer sings of a Fatherland now united to the greater Reich in *Lied aus Böhmen* (Langen-Muller).

This sketch would be incomplete without a brief reference to the literature of German Switzerland, now the only independent German community outside the Reich. Switzerland's reaction to its powerful neighbours is shown by this year's most successful novel, *Schweizerspiegel*, by Meinrad Inglin (Staackmann). It mirrors the vicissitudes which befell a typical Swiss family during the fateful years 1914–18, when Switzerland stood on the armed defensive between East and West. He who would see modern Germany through Swiss eyes should read *Das Reich ohne Mitte* (Oprecht) by B Diebold, a former critic of the *Frankfurter Zeitung*. In drama and lyric there was no outstanding performance.

There remains the not inconsiderable writings of the *Emigranten*, of figures of international repute like Stefan Zweig, Franz Werfel, Heinrich Mann, and many others whom race or political conviction have driven into exile. Though they have produced work of merit, the greatest of them, Thomas Mann, has been silent except for a volume of critical essays. Moreover, they already have the ear of the foreign public, and their works published in Amsterdam and Stockholm, are regularly reviewed in the international press. They represent a phase in German literature which, as far as the Third Reich is concerned, is of the past, and the object of this article was to delineate the present.

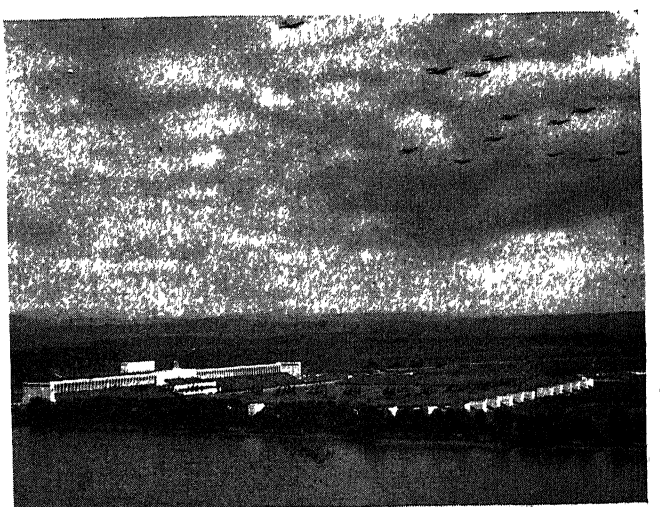
The following surveys have all been written since 1933 — A. Soergel, *Dichter aus deutschem Volkstum* (Leipzig, Voigtlander); H. Langenbucher, *Volkhafte Dichtung der Zeit* (Berlin, Junker und Dünnhaupt); W. Linden, *Geschichte der deutschen Literatur von den Anfängen bis zur Gegenwart* (Leipzig, Reclam); F. Koch, *Geschichte der deutschen Dichtung* (Hamburg, Hanseatische Verlagsanstalt); J. Beer, *Deutsche Dichtung seit 100 Jahren* (Stuttgart, Franckh); P. Fechter, *Die deutsche Literatur vom Naturalismus bis zur Literatur des Unwirklichen* (Leipzig, Bibliographisches Institut), Current literature is reviewed in the monthlies: *Die Literatur. Monatsschrift fur Literaturfreunde* (Stuttgart, Deutsche Verlagsanstalt), *Die neue Literatur* (Leipzig, Avenarius Verlag). (L. A. W.)

GERMANY. The first weeks of 1938 passed quietly in Germany, with less unemployment than usual; but a feeling of puzzled bewilderment spread amongst the people when the meeting of the Reichstag on Jan. 30, to mark the fifth anniversary of Hitler's power, was postponed. After a week of rumours, two decrees of Feb. 4 explained the situation. Drastic changes took place in the army. Hitler himself assumed the title of Supreme Commander of the Armed Forces; the post of War Minister was abolished; the functions of Field-Marshal von Blomberg were given to General Keitel (*q.v.*), who was to work under Hitler as Chief of the Supreme Command. General von Fritsch was replaced by General von Brauchitsch (*q.v.*) as commander-in-chief, and seven other army generals and six air force generals were retired. Herr von Ribbentrop was recalled from London to take Baron von Neurath's place as Foreign Minister, and a "secret inner council" was formed to advise Hitler on foreign affairs.

It transpired later that the displaced generals were those who had been lukewarm in supporting Hitler's expansionist plans in central Europe. The army purge, in short, was only a preparation for the *Anschluss* with Austria. Hitler had delivered an ultimatum to the Austrian Chancellor at Berchtesgaden on Feb. 12; and, after two more ultimatums on March 11, Austria was invaded at three points by German troops A law of March 13 made Austria part of the German Reich The mass of Germans, impressed by the gain of 6,876,000 new nationals and by the speed and bloodless nature of the *Anschluss*, looked upon this as an immense victory and supported Hitler in the subsequent plebiscite.

The second great *coup* of the year concerned Czechoslovakia In the Reichstag speech of Feb. 20, Hitler had referred to ten million Germans prevented from joining the Reich. A propaganda campaign, waged ceaselessly for six months, urged justice for the 3,250,000 Germans in Czechoslovakia In the first crisis of May 21, the Czech army was partly mobilized. Six months later, Dr. Goebbels revealed that "on May 28 the Fuhrer decided to settle the Sudeten problem this year" and "made his preparations accordingly". Germany constantly widened her demands. From regional autonomy she came to demand complete cession of all the districts with a German majority. Hitler's final terms were embodied in the Godesberg memorandum of Sept. 23, and, although the terms of the Munich Agreement of Sept. 29 were more favourable, Germany obtained practically all that she asked for at Godesberg. In the end she gained 10,800 sq. miles of territory, with 3,600,000 people, of whom 800,000 were Czechs; but, as in the case of Austria, the economic advantages were over-estimated.

It was against this menacing background of the Austrian and Czech crises that German internal movements occurred during 1938. All the emphasis was on the army and the Four Year Plan, in an attempt to prepare Germany for the "total" warfare of the future or, if that were avoided, to make her so strong that her demands would be granted without fighting. The most obvious item in this preparation was the strengthening of the armed forces. In 1935 Hitler had announced a force of twelve army corps, but a



Keystone]

THE ZEPPELIN FIELD AT NUREMBERG

fourteenth corps was formed after the January purge and, to the amazement of experts, the two new army corps drawn from Austria were designated the seventeenth and eighteenth. This brought the German army up to its pre-war numerical strength. The Army Year Book, published in November, gave the standing strength of the German army as a million men, organized in six army groups or eighteen army corps. During the year the Siegfried Line, a line of steel and concrete pyramids, was built along the western frontier. Flaws in mechanization revealed during the Austrian crisis were remedied during the summer, so that the occupation of the Sudetenland by thirty divisions (450,000 men) was a triumph of organization.

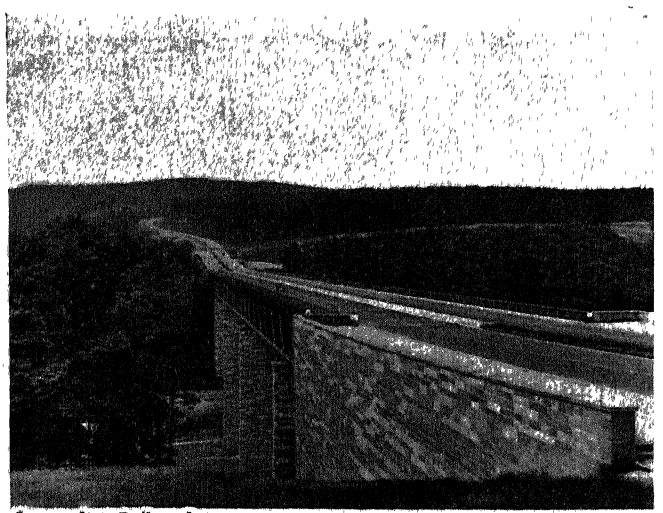
The air force was perfected as Germany's striking weapon. According to Field Marshal Göring's newspaper, Germany's front-line air strength at the time of the Munich Conference was 3,000 machines, and they are to be doubled by 1940–1. The fleet has also been increased. Three battleships of 35,000 tons are being built, as well as four large cruisers and ten submarines. Special emphasis is placed on two 10,000 ton aircraft-carriers, the first of which was launched on Dec. 8. In December Germany notified the British government, under the Anglo-German naval pact, of her intention to build up to 100 per cent of British tonnage in the submarine class, and a British naval mission flew to Berlin to discuss this. The second part of the scheme for national protection was the drive for economic self-sufficiency. In order to make Germany a self-contained fortress, all economic life was subordinated to the needs of Field-Marshal Göring's Four Year Plan. The year opened with important changes in personnel. Herr Walther Funk took over the duties of Dr. Schacht as Minister of Economics on March 5, and the ministry became the executive agent of the Plan. Its task was to centralize all economic life, practically on a war footing. In the Reichstag speech of Feb. 20, Hitler claimed that unemployment had been eliminated, that industrial production was still booming, and that tax-receipts were increasing. All of these claims were justified. Germany has undoubtedly achieved an armaments expenditure on a scale that would have been deemed fanciful a few years ago. She has doubled her industrial production in the last five years, and she has kept her people employed. The doubt raised during 1938 was whether the position could be maintained.

The labour shortage has become acute, especially since half a million workers were taken under the Labour Conscription Law of June to work on the western fortifications. Every employable person in Germany is working. In September only 156,000 were unemployed in Germany proper, less than ever before, and, even in Austria, the number of unemployed has dropped from 600,000 to 100,000. In addition, over 6,500,000 women now have jobs. The shortage is most marked in the skilled trades and in agriculture. It was only with the help of the army and the Nazi formations that the 1938 crops were harvested; agricultural labour was also imported from Italy. To cope with the problem, the length of apprenticeship was reduced; skilled labour was diluted by more and more unskilled workmen, attempts were made in the autumn to repatriate German emigrants from abroad; and Dr. Ley started an efficiency-drive to double the output of each factory-worker.

On the other hand, Germany experienced a shortage of raw materials, especially iron, and she found difficulty in selling enough goods abroad. Despite new trading-agreements with many countries, her unfavourable trade-balance for the first ten months of the year amounted to 210 million marks, as contrasted with a favourable balance of 443 million marks in 1937. One reason for this was that Germany was amassing sufficient reserves of war supplies to last her for a year of hostilities. In particular, her imports of mineral oils increased, despite enlarged production at home.

Hitlerite Germany has evolved an economic system of checks and controls, to secure the full use of reserves which are not usually mobilized in other countries except in war-time. The fullest use is made of capital and labour. Costs, investment, foreign trade are all controlled. Many striking results have been produced by the system: the main criticisms are that the deadweight of investment in armaments and uneconomical substitutes has caused a restriction of popular consumption. There is too much expenditure on capital goods as against consumption goods; hence the marked recession of stock values after mid-July. Nazi economists claimed that they could go along indefinitely by means of credit-creation, so long as each new issue of credit increased total production; but foreign critics said that, to do this, a proper equilibrium must be maintained between capital goods and consumption goods. The authorities are trying to bridge the gulf by making the people accept a lower standard of living.

In the spring Dr. Schacht tried to limit the inflation of credit, but the ever-growing expenditure on defence frustrated his efforts; and, although tax-receipts increased by 15 per cent in 1938, the position grew steadily worse. At the annual meeting of the Reichsbank in March, Dr. Schacht held that more normal methods of finance could replace the emergency decrees of the last few years. On April 1 he replaced the ill-famed *Sonderwechsel* or "special bills" by new *Lieferschätze* or "delivery bills", which were to be issued in known amounts for short periods and were to be repaid at maturity from ordinary budgetary receipts. But owing to the deterioration of the financial position they have become just as much an instrument of credit-inflation as the "special bills". During the year some progress was made in consolidating short-term loans. Four long-dated loans were issued, for a total of £387,500,000, bringing the total amount of consolidated loans since 1935 to £1,166 millions. Despite the success of the loans, the debt position became much worse. At the end of the year the monthly deficit was estimated at £100 millions, and



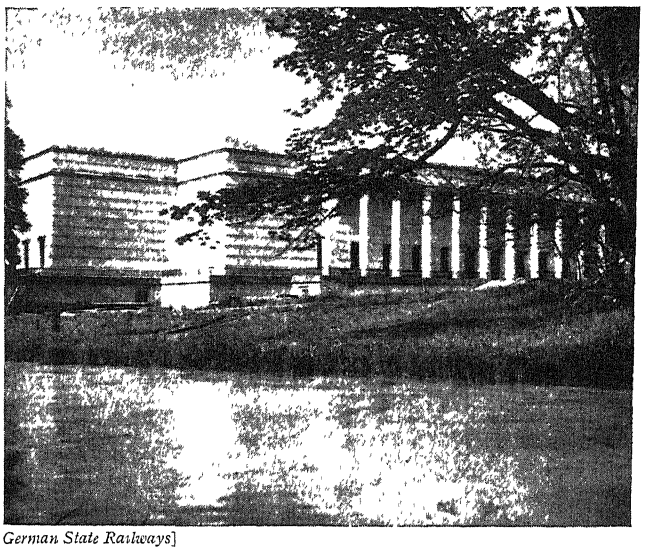
German State Railways]
BRIDGE OVER THE WERRA ON THE KASSEL-GÖTTINGEN "AUTO-BAHN" OPENED IN 1938

the government was finding it difficult to borrow even half of this. Hence arose criticisms that the November pogrom had an economic motive, and hence too rumours in December about a capital levy The total public debt is said to be in the vicinity of £3,000 millions, but no official figures are given. Dr. Schacht told a meeting of economists in November that the Reichsbank had taken a great risk in granting thousands of milliards of marks in credits, but that this policy, which was not of Germany's choosing, has enabled the country to rearm herself and to attain a position where she can wrest economic advantages from other countries and thus set her own economic house in order After the September crisis, the Nazi problem was to prevent the credit-inflation degenerating into uncontrollable currency inflation The note-circulation has steadily increased By Sept 30 the notes in circulation exceeded eight milliard marks for the first time since the collapse of 1923 A year before the figure had been only 5¼ milliards, and it was absurd to say that an increase of sixty per cent was due to the expansion of industry.

The year closed, then, with the government facing grave economic problems. Despite the maximum of employment, debts and expenditure were rising enormously; the cost of living was going up, and a diminution in taxation returns was becoming inevitable owing to the growth of unproductive expenditure. With export prices falling and everything else rising, some form of devaluation or repudiation appeared a possibility.

In the meantime, plans for a trade drive in eastern and southern Europe were attracting more attention. Herr Funk made a tour of the Balkans, and a new commercial diplomacy was evolved, by which Germany took the primary commodities of the agricultural countries on advantageous terms and, by a barter-agreement, offered in return her own manufactured goods, often below cost The new markets, raw materials, and foodstuffs made the Four Year Plan practicable, and helped Funk's plans of an economic world-within-a-world. Germany's internal position was transformed and the balance of power in Europe altered. The political absorption of one zone of central Europe and the economic expansion over the remainder was thus a most significant development.

In foreign affairs, the basis of German policy remained the progressive realization of pan-Germanism, to be attained by co-operation with Italy (the Rome-Berlin Axis) and Japan (the Rome-Berlin-Tokyo Triangle). The Axis, strengthened by Hitler's visit to Rome in May and by Italy's aid to Germany during the September crisis, has become stronger. After the crisis, an Anglo-German declaration was made at Munich on Sept. 30, and was followed by a Franco-German pact of non-aggression signed at Paris on Dec. 6. The effects of these were minimized by Germany's support "in principle" of the Italian colonial claim and by the general deterioration of the international situation; and the possibility of a Four Power pact receded into the background. In December renewed German interest in eastern Europe became marked. By the "Judgment of Vienna" of Nov. 2, Germany and Italy demarcated the Czech-Hungarian frontier. Immediately afterwards, Germany opposed a joint Polish-Hungarian frontier in Ruthenia, and the coolness between Poland and Germany grew when it was felt that Germany was aiding the movement for a Greater Ukrainia, to include Polish, Rumanian, and Russian territories as well as Ruthenia. The year closed, then, with Hitler's dynamic foreign policy, strengthened by its recent successes, still "on the march". After the Sudetenland, Hitler stated that he had no more territorial grievances, but this was later qualified to except the legitimate agitation of Germans abroad to secure justice; and so the position remains where it was before. The colonial question was raised intermittently during the year, and Germany was annoyed by the stiffening of French and British opinion on the matter, but Hitler announced on Nov. 8 that "this is not a question to go to war about". The claims therefore remain in abeyance.



German State Railways]

MUNICH · THE HOUSE OF GERMAN ART, OPENED IN 1938

Inside Germany the process of "co-ordination" seemed to be complete. The *Gestapo* were unusually active, and barely a week passed without the red posters announcing the execution of some enemy of the State. To deal with the weakening of public morale after the war-scare of September, the official press worked up a regular spy-mania in November, and the "security service" claimed to have discovered a plot against the regime. The extraordinary feature was Hitler's own admission, in a speech of Dec. 2, of the continued existence of hostility to National Socialism. During the year, there was a marked divergence of policy between the extreme Nazis, led by Dr. Goebbels, Himmler, and Rosenberg, and the moderates under Field-Marshal Göring. The Führer himself fluctuated between the two camps, although his later speeches at Saarbrücken and Weimar were less restrained than his earlier ones.

The main fight for "co-ordination" was against the Churches and the Jews. The decree of Dec. 11, 1937, was enforced to secure direct State control over the Evangelical Church. Pastor Niemöller, the Confessional leader, was convicted on March 2, and has remained in a concentration-camp ever since. At the beginning of May, all pastors were ordered to take an oath of loyalty to the Führer and the regime or be dismissed. In November the administrative leaders of the Confessional Movement lost their posts, and it was reported that Hitler desired their trial for "treason at the altar". The campaign against the Catholics was no less bitter. Several penalizing decrees were issued in Bavaria early in the year, and the fight was continued in Austria after the *Anschluss*. On Oct. 8, the palace of Cardinal Innitzer was attacked in Vienna, and that of Cardinal Faulhaber in Munich on Nov. 12. Towards the end of December the Vatican prepared a White Book answering the decrees that were being mooted in Germany

to bring the Catholic Church under State control; and it appears that such decrees will not only abrogate the 1933 Concordat, but will strike at the very existence of Catholicism in Germany.

The position of the Jews (*see* ANTI-SEMITISM) has become intolerable. The avowed aim is their elimination from German economic life. Goring's decree of July 6 closed many occupations to them, and, after Aug 3, they were not allowed to practise as doctors. Jew-baiting set in afresh after the October crisis and especially on Nov. 10, on the occasion of the death of a junior diplomat, Dr. vom Rath, shot in Paris by a young Polish Jew. Widespread riots occurred for fifteen hours and were approved by the Nazi leaders. On Nov. 12, the Jewish community in Germany was fined 1,000 million marks (£84 millions), and Jews were forbidden to own retail shops. Further decrees in December precluded all Jews from owning houses or farmlands, and ordered the summary sale of existing holdings. The aim was to create an "economic ghetto", while in some towns actual ghettos were set up. If the Nuremberg Laws had reduced the 600,000 Jews of Germany to helotry, the November pogrom made it impossible for them to live as ordinary human beings. These events aroused widespread condemnation abroad, and dealt a heavy blow to the cause of appeasement. So strong was feeling in the United States that there was a clamour for the breaking off of diplomatic relations with Germany, and Mr. Hugh Wilson, U.S. ambassador in Berlin, was recalled to Washington "for report and consultation". The German government replied by recalling Dr. Dieckhoff, German ambassador in Washington. In December Mr. Ickes, U.S. Secretary of the Interior, made such a bitter attack on "German barbarism", that the German Chargé d'Affaires in Washington was instructed to make a formal protest. The protest was summarily rejected, and press polemics on both sides continued at a higher pitch than ever. On this unhappy note the history of Germany in 1938 closed. (S. H. R.)

Area and Population :
Area est. Nov. 30, 1938, 225,000 sq. miles.
Population est. Nov. 30, 1938, 77,950,000.
Chief Towns (Pop. est. Jan. 1, 1937): Berlin (4,251,000); Hamburg (1,097,000); Cologne (762,000); Munich (756,000); Leipzig (698,000); Essen (622,000); Dresden (637,000); Breslau (625,000); Frankfurt (551,000); Dortmund (540,000); Dusseldorf (515,000); since March 1938 Vienna (2,087,000).

Führer and Chancellor. Adolf Hitler.

Language : German.

Religion : Christian (1933 Lutheran 40,865,151; Roman Catholic 21,172,087).

Production 1937 :

Wheat	4,466,700	metric tons
Barley	3,637,800	,, ,,
Rye	6,916,700	,, ,,
Oats	5,918,600	,, ,,
Potatoes	55,309,000	,, ,,
Beet Sugar	1,965,300	,, ,,
Wool	19,600	,, ,,
Artificial Silk	65,000	,, ,,
Wood Pulp (1936)	2,367,000	,, ,,
Lignite	184,672,000	,, ,,
Coal	184,513,000	,, ,,
Manganese Ore (1936)	191,200	,, ,,
Iron Ore (metal content)	2,600,000	,, ,,
Pig Iron (monthly average 1,330,000)	15,958,000	,, ,,
Pig Iron (Oct. 1938)	1,611,000	,, ,,
Steel (monthly average, 1,654,000)	19,817,000	,, ,,
,, (Oct. 1938)	2,057,000	,, ,,
Bauxite	92,900	,, ,,
Aluminium	127,500	metric tons
Superphosphates of Lime (1936)	959,000	,, ,,
Potash	1,968,000	,, ,,
Shipbuilding, tonnage launched	435,600	gross tons
,, under construction (Dec 31, 1938)	355,737	gross tons

Labour and Industry :

Index of Industrial Production (av. 1937)	117·2
(1929 = 100) (Sept 1938)	130·2
Number employed (April 30, 1938)	19,957,000
,, unemployed (April 30, 1938)	423,000
,, ,, (Sept 30, 1938)	156,000

Overseas Trade (Old Reich), merchandise 1938 :

Imports	Rm 5,449,300,000
Exports	Rm. 5,257,100,000

Communications :

Roads, fast motor (Dec 15, 1938)	1,900 miles completed
Railways, State (Jan. 1938)	33,850 miles
Shipping (June 30, 1938)	4,243,800 gross tons
Air Traffic, continental, miles flown 1937	11,860
Navigable waterways 1937	7,700 miles

Finance and Banking :
Expenditure 1934–35 (last official figure published), Rm 8,220,900,000
Tax and Customs Revenue, and Public Debt (from the report of the *Reichs-Kredit-Gesellschaft Aktiengesellschaft*, Aug. 1938)

Revenue (1934–35)	Rm. 8,223,000,000
,, (1935–36)	Rm. 9,654,000,000
,, (1936–37)	Rm. 11,492,000,000
,, (1937–38)	Rm. 13,964,000,000
Public Debt (Mar. 31, 1938)	Rm. 14,000,000,000
Government Loans (1938)	Rm. 6,700,000,000

Exchange Rate, (average 1937) Reichsmarks (Rm.) 12·29 = £1 stg.
Exchange Rate (Dec. 29, 1938): Rm. 11·60–65 = £1 stg.

Reichsbank Return Dec 31, 1938 (000's omitted)

Assets	Rm
Gold	70,773
,, of which deposited abroad	10,572
Reserve in foreign currencies	5,515
Bills of exchange and cheques	8,244,042
Silver and token money	116,453
Advances	44,861
Investments	854,538
Other assets	1,504,650
Liabilities	
Share capital	150,000
Legal reserves	83,286
Special reserves for future dividend payments	40,307
Other reserves	390,849
Notes in circulation	8,222,647
Other daily maturing liabilities	1,527,496
Other liabilities	426,247

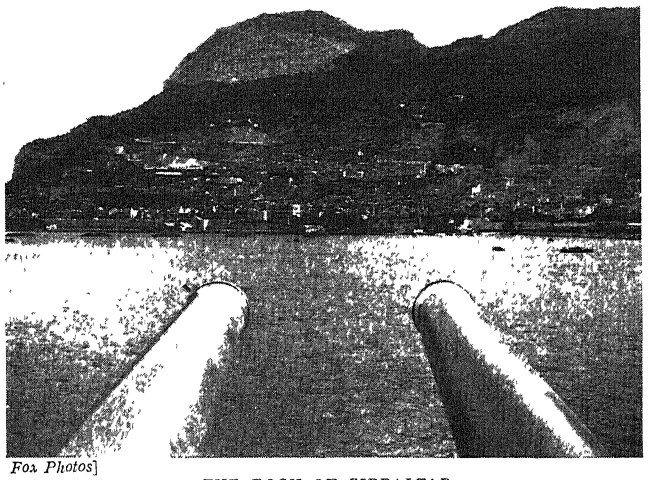
Education, May 15, 1936:

Elementary schools	52,370	: scholars	7,892,184
Middle ,,	1,275	: ,,	235,178
Higher ,,	2,319	: ,,	671,073
Universities	27	: students (1936-37)	71,850

Miscellaneous :
Motor vehicles licensed (July 1, 1937); passenger cars 1,108,433; lorries 320,016; buses 17,294, cycles 1,327,189.
Wireless receiving-set licences (Aug. 1, 1937) 9·8 per 100 inhabitants. Telephones (1936–37) 5·1 per 100 inhabitants. (W. H. W.)

GIBRALTAR. In Oct. 1938 Sir Charles Harington was succeeded as governor and commander-in-chief by General Sir Wm. Edmund Ironside, G.C.B.

In view of the danger of an epidemic, the number of



Fox Photos]

THE ROCK OF GIBRALTAR

Spanish civil war refugees who had settled at Gibraltar was drastically cut down in May. The Spanish insurgent, General Queipo de Llano, was alleged to have prophesied, in a broadcast made at La Linea on Feb. 27, that Gibraltar would soon return to "its legitimate owners, the true Spaniards"; but it was stated shortly afterwards that the speech had been misreported In the British House of Commons in July the Secretary for War admitted the presence in Nationalist Spain of guns capable of shelling Gibraltar, but denied feeling any anxiety on this account. No. 1 Admiralty Graving Dock is being reconstructed, and when the new works are complete, will be capable of receiving the largest British battleships. At the end of March a new reservoir (1,175,000 gallons) was completed on the north-west side of the Rock, and the construction of another, of twice the capacity, is in progress.

Area and Population :
Area $1\frac{7}{8}$ sq miles.
Population (1937) 16,188 (7,539 males, 8,649 females).
Governor. General Sir Wm. Edmund Ironside, G.C.B.
Trade. A free port. no statistics kept.
Shipping 1937 :
Entered, 13,728,709 tons net; cleared, 13,715,000 tons net.
Finance and Banking :

Revenue, ordinary (1938)	£205,800
Expenditure, total ,,	£202,152
Notes on circulation (Dec 31, 1937)	£205,000

Education 1937 :
Elementary. 13 schools, 2,884 scholars.
Secondary: 4 ,, 446 ,,

GIRL GUIDES. The peak event of 1938 for Girl Guides happened in June, when 1,000 First-class Guides attended a service at St. George's Chapel, Windsor. Before the service the Guides marched past the King and Queen, and the Princesses Elizabeth and Margaret who were in Guide uniform.

Juliette Low was the founder of the American Girl Scouts, and, through a fund raised in memory of her, Guides from all countries where they exist can meet together every year. In 1938 the meeting took place at the Guide Chalet at Adelboden, and amidst its glorious surroundings a very happy and profitable time was spent. In July, Guides from many countries met at a camp in Lithuania. Such gatherings are a very real help towards widening the vision and minds of the girls who take part, and enabling them to understand the view-point of the girls of other nations.

A successful Sea Ranger Training took place on board the "Implacable", and a camp for Guides from public schools was held at Hatfield.

Camping has proved as popular as ever A new permanent camp site was opened at Cudham, in Kent, of which full use has been made by London Guides. Staffordshire has been given 123 acres by the Marquess of Anglesey as a permanent camp site for Scouts and Guides in commemoration of King George V. The site was opened by the Princess Royal on July 2

There is now a World Hostel in Palace Street, Westminster, towards which Guides from all over the world have subscribed, where they will be able to stay at any time they are visiting England

During the September crisis Girl Guides were able to co-operate in a very practical way with the Women's Voluntary Services, particularly in arranging reception details for the evacuation scheme, and in providing squads for the assembly of respirators and carrying out emergency duties.

The census for 1938 is not yet to hand, but according to the latest figures there are approximately 1,340,000 Guides in the world, 526,000 of them being in Great Britain. Twelve awards for gallantry have been made during the year. (N. M.)

GLANDS: *see* ENDOCRINOLOGY; PHYSIOLOGY.

GLASGOW. The second largest city in Great Britain and the fifth in the British Empire, covers an area of 39,788 acres, the 1931 census population of 1,088,524 was estimated to have increased to 1,126,000 by June 1938, the approximate rateable value is £11,082,859, and the rates for 1938–39—owners' 6*s.* 4·11*d.*; occupiers' 8*s.* 2·2*d.* The city is situated on both banks of the river Clyde, one of the world's greatest commercial highways; in the year ending June 30, 1938, the port was entered by 7,937,656 tons of shipping (13,390 vessels), and 7,784,264 tons (13,190 vessels) was cleared.

The city is a great shipbuilding centre, and during the first ten months of 1938, 73 vessels (among them the "Queen Elizabeth") of 352,340 tons were launched; manufactures include iron and steel goods, chemicals, textiles, tobacco, and haggis, while among the newer ones are aeroplane dope and accordions; the city had no strikes or industrial disputes during 1938. New municipal enterprises include the inauguration of a fleet of streamlined electric tram-cars; the Crookston Cottage Homes (opened on Sept. 6 by the Lord Provost), a settlement built by the Glasgow Public Assistance Department on a site of some 85 acres for aged persons, and including its own hospital; and the new Municipal Information Bureau, officially opened by the Lord Provost in April. Up to the end of October, 47,491 houses had been completed under the Corporation Housing Scheme, and arrangements made for the building of another 7,585.

Apart from the great Empire Exhibition (*see* FAIRS AND EXHIBITIONS), which was opened by Their Majesties in person and was visited by various members of the Royal Family, the chief social event of the year was the launching at Clydebank on Sept. 27 of the new Cunard White Star liner, "Queen Elizabeth", by H.M. Queen Elizabeth, accompanied by Princess Elizabeth and Princess Margaret, the attendance of the King having been prevented by the international crisis, then at its height.

GLASS. Production in Great Britain and America in 1938 showed an increase over 1935, the last year for which figures are available. The British glass industry, in 1935, used 530,000 tons of sand, employed 45,000 persons, and

made ware valued at £17 millions The American industry, 1935, used 2,300,000 tons of sand, employed 67,000 persons, and the value of ware made was $28.4 millions In both countries, bottles and jars make up about one-third the production value, with plate glass in second position. The comparatively lower number of employees and lower price per unit weight in American production are explained by more mechanization

The Glass Delegacy of Great Britain announced a fund approaching £40,000 for "Elmfield", the laboratories of glass technology, University of Sheffield. In the United States, a large corporation was formed for manufacturing glass wool and glass-fire products; a new process for silica glass reached the production stage, monopoly investigations revealed close control over feeding and forming machinery, the Interstate Commerce Commission ruled against the use of toughened (tempered) glass in motor cars, but its use had become general in England; all-glass buildings were designed to exhibit advanced ideas in architecture at the 1939 exhibitions.

German glass technologists arranged the Third International Congress on Glass, to meet in Berlin and Munich, July 1939 (Milan, 1933; London, 1936). By acquisition of Austria and part of Czechoslovakia, Germany became the second nation in glass production, and first in numbers employed.

Research continued on fundamental properties of glasses as clues to their constitution. International co-operation was applied to methods for studying strength, chemical durability, and thermal properties of glass. (*See* also INDUSTRIAL RESEARCH.)

BIBLIOGRAPHY. G. W. Morey published in 1938 *The Properties of Glass*, a fine compendium of present-day knowledge on this material.

GLIDING. The science of flying without power has made far greater progress in 1938 than in any preceding year. As more than 1,000 pilots now hold the highest "Silver C" international rating, the I.S.T.U.S. (*Internationale Studienkommission für den Motorlosen Flug*) has issued a higher "Golden C" with requirements of 1, "Silver C"; 2, Distance of 300 km.; 3, Altitude of 3,000 metres. More than 15 pilots already have won this award.

The German pilot, Dreschsel, reached the astounding altitude of 23,190 feet, beating the record of 20,303 established only four days previously by another German, Werner Flick. Dreschsel was towed by an aeroplane up to a height of 3,080 feet, and then released Another German Bernard Flinsck, set an international distance and return record of 190 miles. The Russian pilot, Kartashev, established a new distance record of 400 miles with a passenger Two Austrians, Kahlbacher and Führinger, made a duration record of 40 hrs, 51 min A new record for two-seater gliders was made by two British pilots, Flight-Lieut W B Murray and J. S. Sproule, who took off from Dunstable Downs and remained in the air for 22 hrs. 13 min 35 sec

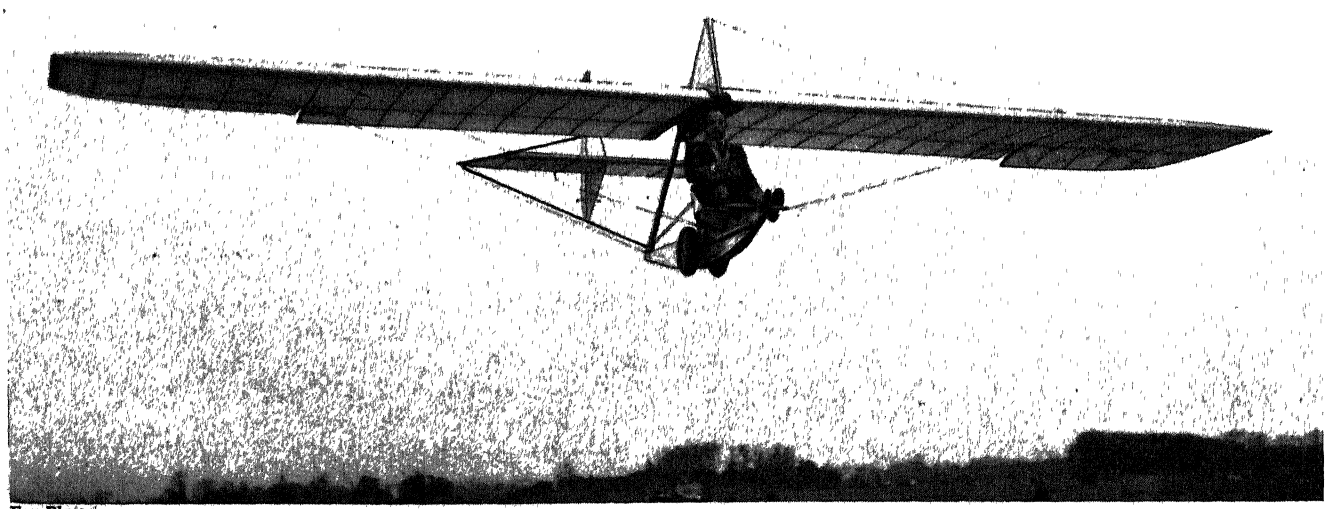
A British long-distance record set up by Fox (144 miles) on April 18 was broken by P. Wills, who on April 30 flew from Heston to St Austell (Cornwall), about 200 miles. A British record for duration was made by H. O Pich, with 13 hrs 27 min In Germany a distance record set up on April 19 by Khetz (143 miles) was broken by L Hoffman with a flight of 218 miles from Trebbin (near and S. of Berlin) to Deblin (N. of Brno, Czechoslovakia).

Two American national records were made in 1938. On April 19, L. B. Barringer made the distance record on a "goal" flight of 212 miles from Wichita Falls, Tex., to Tulsa, Okla., the first long-distance flight ever made over level country. Richard du Pont exceeded his altitude record by reaching 6,804 feet.

GOEBBELS, JOSEF (1897–), German Reich minister for propaganda and president of the Reich culture chamber, during 1938 strengthened his control over the press, radio, and cultural activities generally. On Jan. 1, in a broadcast message to the nation, he proclaimed that "Versailles is dead, and the Geneva institution that arose from it will suffer a similar fate", and in another on the 30th, the fifth anniversary of Hitler's appointment as Chancellor, he said that their aspirations during those five years seemed now a distant dream, for they had become realities.

Early in February he was appointed to the secret cabinet council newly created by the Führer to advise him on foreign policy, and in March organized the oratorical campaigns that heralded plebiscites for the *Anschluss*, himself reading its proclamation from a balcony of the Vienna Rathaus on April 10. During the autumn he played a leading part in the events that led to the transference of Czechoslovak territory to Germany.

In 1938 Herr Goebbels' speeches were characterized by bitter attacks on the foreign Press and the Jews, by demands for the return of colonies, by denunciations—at Nuremberg—of democracy and "its offspring, Bolshevism",



Fox Photos]

HERR R. KRONFELD DEMONSTRATING AT OXFORD UNIVERSITY GLIDING CLUB, FOUNDED IN 1938

and by exhortations to German solidarity and trust in armed force. It was he who, on Nov 12, announced the punitive measures to be taken against the Jews (*see* GERMANY; ANTI-SEMITISM) after having, on the 10th, issued orders that the unauthorized onslaught on them was to cease.

GOGA, OCTAVIAN, Rumanian statesman, was born in Transylvania in 1881, and died on May 7, 1938. After having held office as minister of cults and minister of the interior under Averescu, he formed the National Agrarian Party. This was later amalgamated with the Anti-Semitic National Christian League of Defence to form the National Christian Party In Dec. 1937 M. Goga formed a government, but remained prime minister only until Feb. 11, 1938. M. Goga had considerable reputation as a poet, and he translated much Hungarian poetry into Rumanian. His play *Mr. Notary* was also a success.

GOLD. Unlike other commodities, gold continued to appreciate in terms of sterling in 1938, the quotation rising progressively from 139*s.* 5*d* in January to 150*s* in November Largely for this reason output reached a new high record. The world production for the year was approximately 36,750,000 fine ounces, compared with 34,783,000 in 1937 and 33,109,000 in 1936.

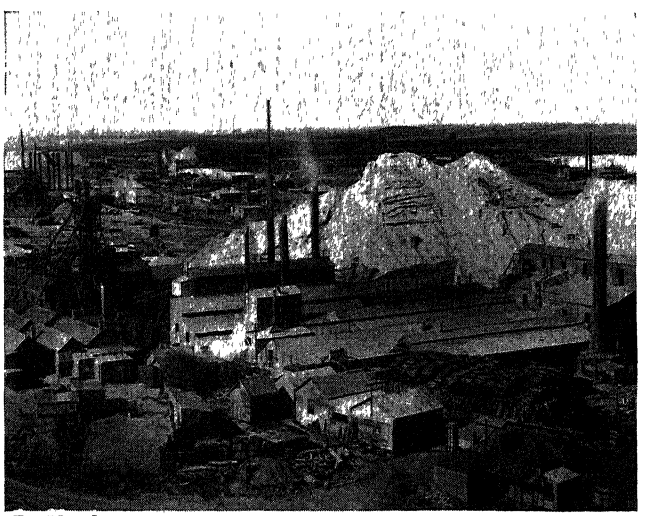
*Gold Production of Leading Countries**

(In thousands of fine ounces)

	1936	1937	1938 †
S Africa (Witwatersrand)	11,336	11,735	12,157
U.S.S R . . .	5,400	5,000	5,000
United States . .	3,760	4,096	4,244
Canada . . .	3,748	4,112	4,680
Australia . .	1,179	1,381	1,570
World . . .	33,109	34,783	36,750
British Empire . .	18,602	19,715	21,080
British Percentage .	56·2	56·7	57·4
South African Percentage	34·2	33·7	33·1

* Figures supplied by Union Corporation. † Estimated.

The Witwatersrand, the declared value of whose output rose by £4 millions to £86 millions, again produced approximately one-third of the world output. The proportion would have been still larger had not the policy been continued of reducing the grade of ore milled with the object of prolonging the life of the mines. Thus the average yield per ton treated (the total tonnage milled amounted to 53,834,000) fell from 4·46 dwt to 4·35 dwt and as there was at the same time an increase in the cost of production (which averaged 19*s.* 3*d.* per ton of ore milled, as against 18*s.* 11*d*) the working profit was barely maintained at approximately £31,700,000 (11*s.* 9*d* per ton of ore milled). The total dividends distributed showed little change at £17 millions, the balance of the year's profit being absorbed mainly by taxation, though large appropriations were also set aside to finance capital expenditure.



Fox Photos]
THE GOLDEN MILE, KALGOORLIE, AUSTRALIA

Despite the expansion in output, the payable ore reserves of the Witwatersrand were well maintained, around 220 million tons, largely because the advance in the price of gold rendered profitable ore which had previously been classed as unpayable and facilitated development at greater depths than had previously been worked. A contributory factor was the bringing of several new mines into production. Outside the Witwatersrand, proper, exploration and development proceeded rapidly in the newly-discovered gold-bearing districts in the Far West Rand and Far East Rand, and though these districts have yet to reach the production stage, which always necessitates very heavy preliminary expenditure, there is little doubt that they will in due course provide an adequate offset to the gradual exhaustion of the existing producing mines in the central field. In the Orange Free State, exploration held out high hopes early in the year that another new gold-field had been discovered but the results have so far proved disappointing, though two of the leading mining groups have closely associated themselves with the principal enterprise in this region.

The Rand mining industry is vitally dependent on cheap supplies of native labour and, in view of the extension now in progress, which is expected to require an addition of over ten per cent to the labour force in 1939, active steps have been taken to enlarge the area of recruitment by the enrolment of tropical natives, whose suitability for employment underground at the great depths at which many of the mines are being worked has now been successfully established.

Elsewhere, the production of gold, though not the opening up of new areas, has in several countries shown greater proportionate progress than in South Africa, where the primary aim has been stability of output consistent with the maintenance of profits. The most spectacular progress was made by Canada, whose output of gold rose by over fourteen per cent, placing that country third in the list of world producers. There was also a large expansion in the output of Australia, the Gold Coast, Colombia, and the Philippines. Estimates of production in the Soviet Union, for which no official figures are available, have had to be scaled down considerably in recent years but it would appear that that country still holds second place among the world producers of gold. (P. F.)

GOLD COAST, THE. The Gold Coast consists of the Colony, Ashanti, and the Northern Territories. Togoland (*q.v.*), under British mandate is administered as part of the territory. The Colony contains an advanced African community: Africans sit on the legislative and municipal councils, and are employed in the higher branches of the civil service. Efforts are being made to reorganize native administration and to develop a more satisfactory system of indirect rule through the chiefs than exists at present. In the Colony the decay of tribal rule owing to the frequent "destoolments" of chiefs, and reluctance to accept any regular system of local taxation, provide serious obstacles.

In the Ashanti, where the Confederacy, in abeyance since the wars of 1896, was restored in 1932, reorganization is more successful; but, here again, progress cannot be satisfactory until the people accept taxation and treasuries are formed for the financing of social services. In the more primitive Northern Territories the position is more favourable, and during 1938 local taxation has been introduced.

While gold and minerals are of increasing importance, the cocoa crop, produced by the individual efforts of innumerable African farmers, remains the backbone of Gold Coast prosperity and forms about forty per cent of the world production. Towards the end of 1937 cocoa growers withheld supplies from the markets as a protest against a price agreement entered into by the purchasing firms. A Colonial Office Commission visited the Colony during 1938 to report on this dispute, and has recommended the formation of a statutory association of all cocoa producers for the marketing of their produce. A Commission has also investigated economic and social conditions (the Leverhulme Research Commission), and another is to report on Achimota College. (J. L. K.)

Area and Population:
Area 91,843 sq. m. (Colony 23,937 sq. m.; Togoland 13,041 sq. m.).
Population (est. June 1937): Native 3,700,267 (Non-African (1931) 3,182.

Governor. Sir Arnold W. Hodson, K.C.M.G.

Production 1937: (E indicates export figures):

Cocoa (E)	235,713 tons
Palm Kernels (E)	2,512 ,,
Manganese (E)	527,375 ,,
Gold	529,212 oz.
Diamonds (E)	1,577,600 carats (£648,057)
Lime Juice (E)	187,215 galls.
Rubber	886,816 lb.

Overseas Trade 1937:
Imports £19,228,363 (specie and currency notes £6,921,608).
Exports, domestic £15,949,533
Re-exports £268,660

Communications 1937:
Roads, maintained by Public Works Dept.. 2,121 miles
Railways, open to traffic 500 ,,
Shipping, net tons (1937): entered, 2,609,644; cleared, 2,614,021.

Finance:

Revenue (1937–38)	£3,791,673
Expenditure (1937–38)	£3,636,269
Public Debt (March 31, 1938)	£9,805,679

Education Dec. 31, 1937:
Elementary Schools: Government, 21; assisted, 417; others, 280.
Scholars, total 70,873. Secondary schools, 20; scholars, 2,758.

GOLDSMID-MONTEFIORE, CLAUDE JOSEPH, British scholar and philanthropist, was born in London in 1858, and died in London on July 9, 1938. He was educated at Balliol College, Oxford, and thereafter became prominent lay chief in liberal Judaism. He was president of the Anglo-Jewish Association from 1896 to 1921, and president of the University College, Southampton, from 1915 to 1934. His opposition to Zionism was not abated by his growing concern at the persecution of the Jews in parts of Europe. Among Dr. Goldsmid-Montefiore's publications were: *The Origin and Development of the Religion of the Ancient Hebrews*, Hibbert Lectures, 1892; *Some Elements of the Religious Teaching of Jesus*, Jouett Lectures, 1910; *Liberal Judaism and Hellenism*; *The Old Testament and After*; and *The Bible for Home Reading*.

GOLF. The outstanding golfing event of 1938 was Great Britain's defeat of the United States in the Walker Cup match at St Andrews, for the first time since the series began in 1921. Tribute was paid on all sides to John Beck, himself a former Walker Cup player, who acted as non-playing captain. Great Britain won by seven matches to four, with one halved, and on the two days' play thoroughly deserved the victory.

In the previous week Charles Yates, a member of the visiting American team, won the British Amateur Championship at Troon, beating R. C. Ewing, of Sligo, in the final. He proved to be one of the most popular Americans who ever came to Britain.

The "discovery" of the year was James Bruen, an eighteen-year-old Irishman, who in the Walker Cup trials completed eight rounds at St Andrews in an average of something like seventy. Later he won the open and close championships of Ireland and established himself as the most promising British amateur in modern times. Other national champions were J. J. F. Pennink (England), E. D. Hamilton (Scotland), and A. A. Duncan (Wales).

England at last won the four-cornered international series at Royal Porthcawl, Scotland having won ever since this event began in 1932. They were captained by Cyril Tolley, who won the President's Putter at Rye for the first time. British amateurs were also successful on the Continent, Harry Bentley retaining the German amateur championship and Brig.-Gen. A. C. Critchley winning the Belgian and Dutch. The inter-university match was won by Cambridge at Westward Ho by ten matches to four.

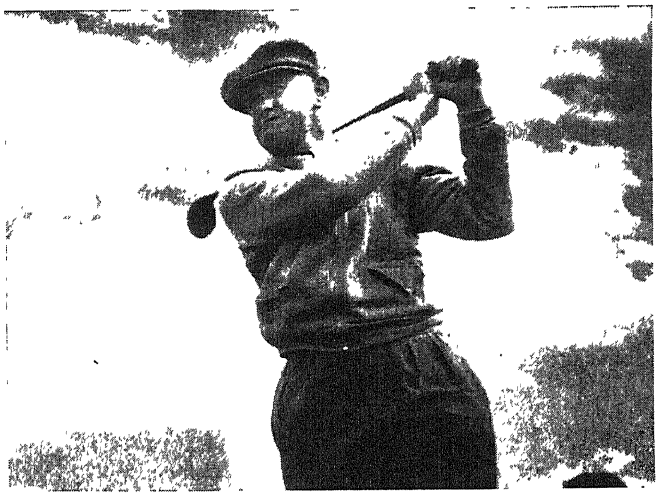
The women's international match against the United States for the Curtis Cup was a disappointment to Britain, who had a good chance of winning for the first time. Despite a lead on the foursomes they lost the match at the Essex County Club, Mass., by five games to three, with one halved. Later they made a poor showing in the U.S. national championship, but a new-comer to the team, Miss Clarrie Tiernan, was narrowly beaten in the Canadian final.

Mrs. Andrew Holm became British champion for the second time after dominating the field at Burnham and Berrow. Miss Elsie Corlett, the runner-up, later had the consolation of winning the English title at Aldeburgh, an event which escaped the usual notice through unhappily coinciding with the European crisis. Miss Jessie Anderson



Sport & General

WALKER CUP FINAL AT ST. ANDREWS: C. YATES (U.S.A.) AND J. BRUEN (GT. BRIT.) ON THE 34TH GREEN



Sport and General]
R. A. WHITCOMBE DRIVING IN THE OPEN GOLF CHAMPIONSHIP AT ST. GEORGE'S, SANDWICH, JULY 8, 1938

won the Scottish title and Mrs. Beck, wife of the Walker Cup captain, the Irish.

Reginald Whitcombe, at Deal, became the first member of this distinguished golfing family to win the open championship. A hurricane blew on the final day, demolishing a large exhibition tent and rendering the golf so difficult that in the last round only three players returned scores of less than eighty. Whitcombe later won the Brighton tournament in a gale of almost equal force.

Alfred Perry had a successful season, winning three tournaments. In the Dunlop-Metropolitan he holed the West course at Wentworth in 69, 68, 67, 69—the first British player to " break seventy " in every round of a major tournament. The young Welshman, Dai Rees, won the professional match play championship for the second time, while Henry Cotton secured the Harry Vardon Memorial Trophy with a season's average of 72·87. On a Continental tour he won the open titles of Belgium, Germany, and Czechoslovakia.

In partnership with Reginald Whitcombe, Cotton defeated the South Africans A. D. Locke and S. Brews in a £500 challenge match at Walton Heath by two and one. The game was characterized by the slowness of the play and the four rounds took nearly sixteen hours. (H. Lo.)

United States. Economic recession apparently had little influence in 1938 upon the resurgence of golf interest so noted in 1937. There were instances of further revision of financial structures in private organizations, but the season found 5,196 golf-courses operating. Of these, 3,489 were private. The others were either municipal or daily fee courses.

The total number of golfers listed (approximate) was 1,376,000 private club members and 463,000 municipal or daily fee players.

The much-discussed ruling which limited a contestant to fourteen clubs had little effect upon scoring in major championships. The United States Golf Association amended the stymie rule, so that a ball within six inches of the cup would be treated as a ball within six inches of another ball, thus giving a contestant the option of requesting that the ball nearer the hole be lifted, whether or not it obstructed his line to the cup.

Perhaps the most-discussed club of the year was the heavy-soled niblick, known as the sand-wedge. Many players, limited to fourteen clubs, discarded implements used infrequently, and substituted sand-wedges of varying degrees of weight and loft In the United States Amateur championship, Willie Turnesa, the winner, carried only two wooden clubs.

Sam Snead, powerful young athlete from West Virginia, became the golfer of the year in America, although he failed to win a major title. Snead, whose prodigious driving and phenomenal scoring earned him approximately $20,000 in prize money, an all-time record in the United States, overshadowed Ralph Guldahl, who defended successfully the United States Open title, and won the Western Open championship for the third consecutive year.

Snead fared poorly in the United States Open, played at Denver, Colo. In this event Guldahl was four strokes behind Dick Metz of Chicago at the beginning of the fourth, and final, eighteen-holes. The defending champion scored a 69, to win the championship by six strokes. Metz finished second. The week following his Denver victory, Guldahl won the Western Open, finishing seven strokes ahead of Snead. Snead reached the finals of the National Professional Golfers Association championship at Shawnee-on-Delaware, Pa , and was a favourite to defeat Paul Runyan, a former champion. Runyan's putting was sensational, and he defeated Snead eight and seven in the 36-hole final. Willie Turnesa won the United States Amateur title when he defeated B. Patrick Abbott, former United States public links champion, by eight and seven in the finals at Oakmont Country Club, Pittsburgh.

Patty Berg, twenty-year-old University of Minnesota student, turned the tables on Mrs. Estelle Lawson Page of Chapel Hill, N.C., when she defeated her by six and five in the finals of the United States women's championship at Westmoreland Country Club, Wilmette, Ill.

GONORRHŒA: *see* VENEREAL DISEASES.

GÖRING, FIELD-MARSHAL HERMANN WILHELM (1893–), minister-president of Prussia, air minister, and commissioner of the Four Year Plan of the German Reich (see *Ency Brit. Book of the Year*, 1938, p. 290), was on Feb. 4, 1938, raised to the rank of field-marshal, and became a member of the new secret cabinet council. In mid-March, when Herr Hitler was in Austria, he acted as Chancellor. At the end of the month he made a speech in Vienna foreshadowing the trial of Herr Schuschnigg and the expulsion from the city of her 300,000 Jews, and at the end of April issued decrees confiscating Jewish capital. In mid-May he was again in Austria, supervising the application of the Four Year Plan, in connexion with which he inaugurated at Linz the Austrian Works of the Reichswerke Hermann Göring (a newly-formed company for the development of low-grade iron-ore fields).

On June 23 the Field-Marshal issued decrees announcing the conscription of the labour of all German nationals, men and women, capable of work, and five days later took power to fix maximum as well as minimum wage standards. Earlier in this month he had opened at Kronenberg the Hermann Göring Master School of Painting which, under his direct patronage, is to produce a truly national art on a new ethical basis. At the Nuremberg rally in his sabre-rattling speech (Sept. 10), he referred to " those ridiculous dwarfs of Prague ", British rule in Palestine, and the overwhelming might of Germany.

Frau Göring, the former actress, Emma Sonnemann, presented her husband with his first child, a daughter, on June 2 ; she was given the name Edda, that of Sig. Mussolini's daughter, the wife of Count Ciano. Among the Field-Marshal's many hunting visitors during the year were Mr. Geoffrey Lloyd, of the British Home Office (with whom

A.R.P. was discussed), the British Ambassador, M. Stoyadinovitch, Marshal Balbo, and Admiral Horthy

GORT, JOHN STANDISH SURTEES PRENDERGAST VEREKER, V.C., 6th Viscount (1886–), Chief of the British Imperial General Staff, succeeded his father in the viscountcy and in the barony of Kilbarton (both in the Irish peerage) in 1902. He was educated at Harrow and Sandhurst, and joined the Grenadier Guards as second lieutenant in 1905. In 1913 he was appointed A.D.C. to the G.O.C. the London District, became captain in the following year, and, on the outbreak of the World War, was in the first contingent that went to France. He served throughout the war, sometimes on the staff and at others at regimental duty; he was four times wounded, was mentioned in dispatches nine times, and earned, beside the V.C., the M.C. and the D.S.O. with two bars. He was an instructor at the Staff College from Jan. 1921 till April 1923, when he rejoined his regiment as O.C. In 1926 he became chief instructor at the Senior Officers' School and in the following January was appointed Gen. Staff Officer (first grade) Shanghai Defence Force. From Aug. 1927 till 1930 he held a similar appointment in the 4th Division, becoming in the latter year colonel commanding the Grenadier Guards and Regimental District. From Nov. 1932 till early in 1936 Viscount Gort was in India as Director of Military Training, and, having been in the meantime (Nov. 1935) promoted major-general, became commandant of the Staff College, Camberley, in March 1936. On Sept. 24, 1937, he was appointed military secretary to the Secretary of State for War with the local rank of lieutenant-general, and received his present appointment a few weeks later (Dec. 2).

Lord Gort was awarded the M.V.O. in 1910 and the C.B.E. in 1928. In 1911 he married his cousin Corinna Katherine Vereker (from whom he obtained a divorce in 1925), and has one son and one daughter.

GOVERNMENT DEPARTMENTS, BRITISH. The following were at the close of 1938 the ministers, permanent under-secretaries, etc., of the more important of the government departments of Great Britain:

Admiralty, The Board of: *First Lord,* Rt. Hon. Earl Stanhope; *Permanent Secretary,* Sir R. H. Archibald Carter.

Agriculture and Fisheries: *Minister,* Rt. Hon. W. S. Morrison (succeeded in Jan. 1939 by Sir Reginald Dorman-Smith); *Permanent Secretary,* Sir Donald Fergusson.

Air Ministry: *Secretary of State,* Rt. Hon. Sir Kingsley Wood; *Permanent Under-Secretary,* Col. Sir Donald Banks.

Burma Office: *See* India Office.

Cabinet Office: *Secretary,* E. E. Bridges.

Civil Service Commission: *1st Commissioner,* Sir Roderick Meiklejohn.

Colonial Office: *Secretary of State,* Rt. Hon. Malcolm MacDonald; *Permanent Under-Secretary,* Sir Cosmo Parkinson.

Commissioners of Crown Lands: *Commissioner,* the Minister of Agriculture and Fisheries (*ex officio*); *Permanent Commissioner,* C. L. Stocks.

Committee of Imperial Defence: *Chairman,* the Prime Minister; *Deputy Chairman and Minister for Co-ordination of Defence,* Rt. Hon. Sir Thomas Inskip (succeeded in Jan. 1939 by Admiral of the Fleet Lord Chatfield); *Secretary,* E. E. Bridges.

Crown Agents for the Colonies: Sir W. Cecil Bottomley, H. C. Thornton, and J. E. W. Flood.

Customs and Excise, Board of: *Chairman,* Sir G. Evelyn P. Murray.

Dominions Office: *Secretary of State,* Rt Hon Malcolm MacDonald (succeeded in Jan 1939 by Sir Thomas Inskip); *Permanent Under-Secretary,* Sir Edward Harding

Duchy of Lancaster: *Chancellor,* Rt Hon. Earl Winterton (succeeded in Jan. 1939 by Mr. W. S Morrison), *Vice-Chancellor,* Sir John Bennett

Education, Board of: *President,* Rt. Hon. Earl De la Warr, *Permanent Secretary,* Sir Maurice Holmes

Foreign Office: *Secretary of State,* Rt. Hon Viscount Halifax; *Permanent Under-Secretary,* the Hon Sir Alexander Cadogan.

Health, Ministry of: *Minister,* Rt. Hon Sir Walter E Elliot; *Secretary,* Sir George Chrystal

Home Office: *Secretary of State,* Rt. Hon. Sir Samuel Hoare, Bt; *Permanent Under-Secretary,* Sir A. Maxwell.

India Office: *Secretary of State,* the Most Hon. the Marquess of Zetland; *Permanent Under-Secretary,* Sir Findlater Stewart.

Inland Revenue, Board of: *Chairman,* Sir Gerald B. Canny.

Labour, Ministry of: *Minister,* Rt. Hon. Ernest Brown; *Secretary,* Sir T. W. Phillips.

Patent Office: *Comptroller-General,* M. F. Lindley.

Paymaster General's Office: *Paymaster General,* The Earl of Munster (succeeded in Jan. 1939 by Earl Winterton)

Pensions, Ministry of: *Minister,* Herwald Ramsbotham, *Permanent Secretary,* Sir Adair Hore.

Post Office: *Postmaster-General,* Maj. the Rt. Hon. G. C. Tryon; *Director General,* Sir Thomas Gardiner.

Privy Council Office: *Lord President,* Viscount Runciman; *Clerk of the Council,* Sir Rupert B. Howorth.

Public Record Office: *Keeper of the Records,* the Master of the Rolls; *Secretary,* C. T. Flower.

Public Trustee Office: *Public Trustee,* Sir Ernest Fass.

Scottish Office: *Secretary of State,* Rt. Hon. John Colville; *Under-Secretary of State,* Sir Horace P. Hamilton.

Stationery Office, H.M.: *Controller,* Sir William R. Codling.

Trade, Board of: *President,* Rt. Hon. Oliver Stanley; *Permanent Secretary,* Sir William Brown.

Transport, Ministry of: *Minister,* Rt. Hon. Leslie Burgin; *Permanent Secretary,* Sir Leonard Browett.

Treasury: *Prime Minister and First Lord,* Rt. Hon. Neville Chamberlain; *Chancellor of the Exchequer,* Rt. Hon. Sir John Simon; *Permanent Secretary and Head of H.M. Civil Service,* Sir Warren Fisher.

War Office: *Secretary of State,* Rt. Hon. Leslie Hore-Belisha; *Permanent Under-Secretary,* Sir Herbert J. Creedy.

Works and Public Buildings: *First Commissioner,* Rt. Hon. Sir Philip Sassoon, Bt.; *Secretary,* Sir Patrick Duff.

GOVERNMENT EXPENDITURE. Different countries have different financial traditions and methods, and budget problems vary from one country to another. Yet over a large part of the world, the year 1938 inflicted upon governments and treasuries one single problem. This was how to provide for a rapidly mounting rearmament bill at a time when both tax revenue and national savings were feeling the effects of the trade recession which began in the previous year.

United Kingdom. The British government's estimated expenditure for 1938–39 is summarized in the following table, which also brings it into perspective with the budgets of previous years. The source is the *Economist* Budget Supplement, April 9, 1938:

Period*	Natnl Income ‖ £ mn	Total Expenditure † £ mn	%	National Debt ¶ £ mn	%	Defence £ mn	%	All Other £ mn	%
1870–76§	1,177	70	5·9	27	2 3	26	2·2	17	1 4
1877–85§	1,242	79	6·4	29	2·3	30	2·4	20	1 7
1886–93§	1,410	80	5 7	26	1·8	32	2·3	22	1·6
1894–1903§	1,666	130	7·8	24	1·4	69	4·1	37	2 3
1904–1910§	1,940	138	7 1	27	1·4	62	3·2	49	2·5
1911–13§	2,241	165	7·4	24	1·1	73	3·3	68	3 0
1924 .	4,035	745	18 5	357	8·8	115	2·9	273	6 8
1929 .	4,384	771	17·6	355	8·1	113	2·6	303	6 9
1932 .	3,844	800	20·8	309	8 0	103	2·7	388	10·1
1935 .	4,530	776	17 1	224	4·9	137	3·0	415	9 2
1936 .	(4,850)	830	17 1	224	4 6	186	3·8	420	8·7
1937 .	(5,200)	908	17·4	227	4·4	262	5·0	419	8·1
1938 .	(5,000)	1,034‡	20 7‡	230‡	4 6‡	343‡	6·9‡	461‡	9·2‡

* Figures of National Income refer to calendar years, figures of expenditure to financial years ended March 21 of following calendar year.

† Including Road Fund expenditure, but not Post Office.

‡ Estimate. § Annual average

‖ Figures are taken from *National Income and Outlay*, by Colin Clark (Macmillan, 1937), pp. 88, 90, and 232 ; they represent net National Income, as defined by Mr. Clark. The figures for 1936, 1937, and 1938 are very tentative guesses for which Mr. Clark is not responsible ; the 1938 figure in particular is necessarily no more than a guess.

¶ Including Sinking Fund

Even these 1938–39 totals are incomplete, for they do not include supplementary estimates for the defence services presented at dates subsequent to the budget of April, 1938. By the end of 1938 these had raised the total estimated defence expenditure from £343 to £358 millions. Whether all this money is actually spent during the financial year 1938–39 will only be known on March 31, 1939.

So far the rearmament burden is not intolerable. It amounts to only 6·9 per cent of the national income, and still falls short of the £461 millions to be spent on administration, the social services, and the miscellaneous costs of government. Still, the total bill, as shown in the table, was £126 millions in excess of the previous year.

To meet the extra expenditure, the Chancellor had had a surplus of £29 millions in 1937–38, and also reckoned to receive an extra £42 millions from his 1938–39 revenue estimates on the basis of the taxation current in 1937–38. Thirty million pounds was to come from increased taxation, including the raising of the standard rate of income tax from 5*s.* to 5*s.* 6*d.* in the pound, and also increases in the duties on petrol and tea. Finally, he envisaged the borrowing of £90 millions in 1938–39, against actual borrowing of only £65 millions in 1937–38. In these ways the gap of £126 millions was bridged.

France. Here the budget problem is intimately connected with the attenuated national income, and until recently the disposition of French savings to seek refuge overseas. Early in April, M. Blum estimated immediately before his fall that the total deficit then was Frs. 49,700 million. His proposals for rectifying this deficit brought about his fall, and M. Daladier took office with M. Marchandeau as his finance minister. By imposing new taxation, by extending his borrowing from the Banque de France, and by floating new loans, M. Daladier managed to reduce the 1938 deficit to Frs. 12,700 millions. Also his devaluation of the franc induced the repatriation of a substantial amount of fresh capital. In these ways he managed to get through until the September crisis, which thrust upon the Treasury the emergency defence expenditure of that month. This created new difficulties and gave rise to fresh political manœuvring. The upshot was that M Reynaud replaced M. Marchandeau as finance minister, and quickly presented France with a comprehensive financial programme.

France's expenditure for 1939 was summarized by him as follows :

	Frs. millions
Ordinary budget . . .	64,500
Extraordinary budget . .	29,500
Caisse d'amortissement expenditure	7,500
Local authorities .	24,000
Railway deficit .	6,000
Public works .	5,500
Total .	Frs. 137,000

Actually Frs 137,000 millions only equals £770 millions, so that the French burden is less than the British burden. Relatively, the French burden equals no less than 55 per cent. of the French national income, estimated by M. Reynaud at Frs. 250,000 millions, equal to £1,400 millions. That is why M. Reynaud insisted that the real solution to the problem lay in an expansion of French national income, production, and savings.

Meanwhile, he had in sight revenue of Frs. 85,500 millions, leaving a deficit of Frs. 51,500 millions. Over half this deficit was represented by the extraordinary budget of Frs. 29,500 millions (or £165 millions), consisting mainly of rearmament expenditure

For 1939, M. Reynaud proposes Frs. 3,000 millions of economies on public works ; Frs. 8,750 millions of increased taxation ; and Frs. 6,000 millions of new borrowing from the Bank of France. Through the general economic recovery of the country, he hopes to get Frs. 5,500 millions, representing the greater buoyancy of the revenue. For the rest, he trusts to an expansion on national savings and a repatriation of capital now abroad, which in time will permit him to float new loans.

Germany. No details of Reich expenditure have been published since March 31, 1935. The 1934–35 budget showed expenditure of RM. 8,000 millions, and according to private estimates, annual expenditure had risen by 1938–39 to RM. 18,000 millions, including RM. 10,500 millions for rearmament and public works. Dr. Schacht, in an address delivered by him on Nov. 29, 1938, said that the total German indebtedness created by expenditure of this kind was considerably less than was estimated outside Germany, and this looks as if the above figures are an over-estimate. The actual truth, however, has still to be disclosed. Dr. Schacht's argument was that it was legitimate to finance rearmament and public works by drawing bills which were rediscounted by the banking system, so long as Germany had a reserve of unemployed labour. By the beginning of 1938 that reserve had been absorbed, and so on April 1, 1938, the creation of credit by the issuing bank (*i.e* the Reichsbank) was stopped, and Reich expenditure was henceforward financed solely by taxation and loans. The transition was effected by means of Treasury bills.

Italy. So far as can be deduced from various statements by the finance ministers during 1938, the following table shows Italian revenue and expenditure :

	1937–38 (lire millions)	1938–39 (lire millions)
Total expenditure . .	25,035	29,316
Of which, Defence . .	9,000	7,033(?)
Total receipts . . .	25,072	24,561
Surplus (+) or deficit (−) .	+ 37	− 4,755

The original 1938–39 defence estimates were Lit. 5,799 millions, but in December an addition of Lit. 1,234 millions

was made to the service credits for the current year This gives the total of Lit 7,033 millions, but it does not follow that this will be the sum actually spent

The 1939-40 estimates, approved by the Council of Ministers on Dec. 14, 1938, foreshadow the following defence expenditure :

Army	3,606	million lire
Marine	2,703	,, ,,
Air	2,165	,, ,,
Total	8,474	,, ,,

The increase of Lit 2,675 millions over the 1938 30 original estimates is described as the first instalment of the additional Lit. 10,000 millions to be spent on defence in view of the "unavoidable requirements of the situation".

Japan. The following table shows Japanese expenditure during recent years :

	1931-32	1936-37	1937*-38	1938*-39
Government expenditure (million yen)	1,477	2,272	5,463	8,400
Of which borrowings (million yen)	120	680	3,393	5,800
War expenditure per cent of total	31	46	73	81
Outstanding government bonds, end December (million yen)	4,525	9,072	10,585	12,422†

* Budget estimate. † End June.

The total of budget and supplementary estimates since the outbreak of the war with China is, according to the *Economist*, Oct. 29, 1938, Yen 7,600 millions, and the outstanding total of government bonds is now about equal to the national income. The cost of the war is being met largely out of borrowing, which will amount to over Yen 9,000 millions for the two years to March 31, 1939. This borrowing has, among other consequences, caused an inflationary expansion of about twenty per cent in the note circulation and bank deposits. (N. E. C.)

United States. For the fiscal year ending June 30, 1939, Federal expenditures in the United States are scheduled to reach a new peace-time high level at $9,492 millions. This represents an increase of $1,866 millions, or 25 per cent, over the 1937–38 budget. Coupled with a decline in estimated receipts for the year, the increased outlay results in a rise in the net deficit from $1,384 millions in 1938 to $3,972 millions in 1929. Except for the year 1936, when the soldiers' bonus was paid, and the year 1934, the estimated deficit for 1939 is larger than that in any previous year outside the World War period.

In the budget submitted to Congress requesting appropriations for the fiscal year ending June 30, 1940, a decline in total expenditures of approximately $500 millions is proposed. Slightly higher receipts are anticipated and the deficit calculated for 1940 is $3,326 millions.

The marked increase in expenditures in 1939 is largely accounted for by an expansion in various relief outlays. Expenditures for unemployment relief and the Agricultural Adjustment programme are estimated to be $1,086 millions higher than in 1938. An additional increase of $349 millions is proposed for public works. Expenditures under the Works Progress Administration increased from slightly over $100 millions per month in the last quarter of 1937 to slightly over $200 millions per month in the final quarter of 1938. The recovery which began in the middle of 1938 reduced the volume of unemployment somewhat by the end of the year, but relief requirements remained at relatively high levels Expenditures under the programme of the Public Works and United States Housing Authority administrations are scheduled to increase through the first half of 1939.

For the fiscal year ending June 30, 1940, ordinary expenditures for national defence are scheduled to increase by $111 millions, and an additional appropriation of $210 millions has been requested for a new national defence programme. Proposed expenditures for unemployment relief are $722 millions lower than for the 1938 fiscal year. The adequacy of the request for relief expenditures will depend entirely on the degree of recovery experienced through the first half of 1940

GRAIN CROPS. Under this heading are reviewed the principal grain crops of the world, with the exception of wheat, which is the subject of a separate article (*q.v.*).

Maize. The output of maize in 1938 was, with one or two exceptions, smaller in every producing country of importance than it was in the preceding year. The reduction in the crop of the United States was partly caused by a smaller acreage, which was brought about by the government's cropping plans. In other words, United States farmers, who wished to qualify for government loans on their crops, were obliged to curtail the acreage. Argentina's crop was cut down considerably by drought, and the output of twenty million quarters was the smallest since 1920. The Danubian group of countries produced four million quarters less than in 1937, and there was a decrease of fully three million in South Africa.



Fox Photos]
GATHERING THE MAIZE HARVEST IN SUFFOLK, SEPT. 1938

The following statement shows the crops of 1938, for which official estimates were available :

***Maize Crops* (*in quarters of 480 lb.*)**
(000 omitted)

	1938	1937	Average 1932–36
Europe (without Russia)	81,000	88,000	79,000
United States	287,000	308,600	245,000
Argentina	20,300	41,900	39,000
South and East Africa	8,000	11,300	7,300
Other ex-European countries	54,000	51,600	50,500
Total	450,300	501,400	420,800

Sources of Supply. Argentina, Danubian countries, South Africa, and French Indo-China are, in the order named, the countries that importers usually depend upon for their annual requirements, but owing to the partial crop failure in Argentina, large supplies had to be obtained from the United States. This country's shipping season begins in November, and it is necessary to state that the 1938 exports were made from the crop harvested in the previous year The accident of Argentina's partial crop failure really paved the way for the re-entry of the United States into the international market. The United States shipments in 1938, of roundly sixteen million quarters, were the largest of any year since 1922, when nineteen million quarters were shipped from a crop of 359 million quarters.

Principal Countries' Shipments (in quarters of 480 lb.)

(000 omitted)

	1938	1937	Average 1932–36
United States	15,930	690	391
Argentina	10,683	42,260	30,300
Balkans and Russia	3,486	†6,735	7,300
South and East Africa	1,136	5,225	1,900
Indo-China	2,572	†2,630	1,700
Total	*33,807	57,540	41,591

* January/November. † revised.

Trade Features. It is not often that maize sells at a higher price than wheat, but such conditions were at least characteristic of the latter half of the year under consideration. This is explained by the lack of serious competition by Argentina.

It will be seen, from the above table of shipments, that the trade in 1938 was smaller than it was in the preceding year, which, however, was not unexpected, because the United States was no longer an importer. At the same time, Europe's purchases were on a smaller scale, owing to Holland and Belgium partly substituting barley and rye for feeding purposes. Germany's imports, however, were large; the total for the ten months January to October was 8,213,000 quarters, compared with 9,931,000 imported in 1937.

On Oct. 1st, 1938, the German government abolished the law making compulsory the admixture of maize flour with wheat flour. Italian millers, however, are still compelled to mix in 10 per cent of maize flour with breadmaking flour. In order to prevent hurried marketings, and to assist growers financially, the United States government introduced a system of loans to growers. The loans range from 43 c. to 57 c. a bushel, according to locality.

Rye. Apart from Soviet Russia, whose crop suffered from drought over wide areas of the country, most countries of Europe enjoyed excellent growing conditions in the spring and summer of 1938. Germany and Poland, the two principal growers next to Soviet Russia, harvested the largest crops since 1933. The output in Germany was 38,860,000 quarters of 480 lb., and in Poland 31,830,000, compared with 31,260,000 and 25,930,000 quarters respectively in 1937. In 1938, the total European output, exclusive of Russia, was roundly 112 million quarters of 480 lb., which was 17 millions larger than in the preceding year; the average production in the five years 1933–37 was 103 million quarters. The ex-European crop in 1938 was 9,930,000 qrs., compared with 6,700,000, the average of the previous five years.

Oats. The most spectacular increase in crop production in the exporting group of countries occurred in Canada, where the 1938 output was nearly twelve million quarters of 320 lb. larger than in 1937. On the other hand, the United States was not so fortunate, the outturn there showing a reduction of ten and a half million quarters. The total world's crop, exclusive of Russia, was 346 million quarters, compared with 331 millions in the preceding year and 292 millions in 1936.

The principal exporting countries are Argentina, Canada, the United States, and Russia. The British market is almost the preserve of Canada, owing to the high duty on foreign oats. Imports into the United Kingdom in the cereal season, Aug. 1, 1937, to July 31, 1938, were 419,000 qrs., contrasted with two million as recently as the season ended 1933. About 76 per cent of the oats imported into the United Kingdom in 1938 came from Canada. Argentina mainly depends on Switzerland, Holland, and Belgium to take her surplus of roundly two and a half million quarters.

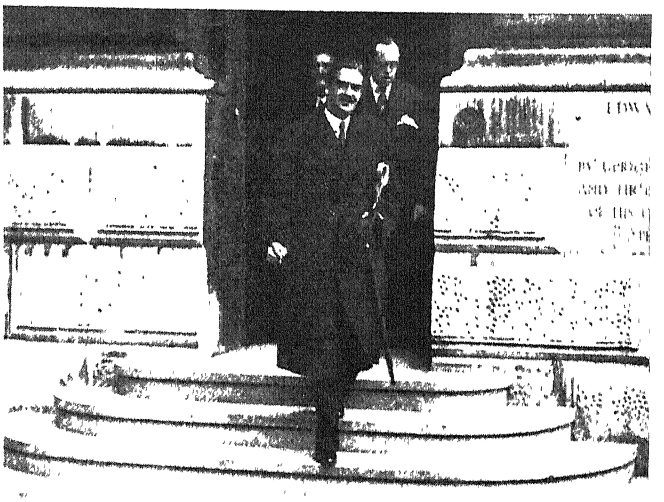
Barley. There are two classes of barley: the feeding and the brewing qualities. Some of the finest brewing sorts are grown on the Pacific coast of the United States and in Chile. Practically every country grows a certain percentage of malting barley, but the official crop estimates make no distinction between the respective qualities. It is, however, fairly safe to say that by far the largest part is feeding barley. In 1938, the world output, exclusive of Russia, but including China, was 230 million quarters of 400 lb, of which 90½ millions were harvested in Europe and 134½ millions in the ex-European countries of the northern hemisphere. The total crop in 1937 was 216½ million (revised), and in 1936, 218½ million quarters.

Brewers in the United Kingdom, in order to assist growers, have continued to carry out faithfully their undertaking to buy at least two million quarters of home-grown malting barley. In 1938, the total crop of the United Kingdom, including feeding qualities, was 4,700,000 quarters.

Rice. Of all the crops grown in India, there is none surpassing, or even equalling, rice in importance. The rice crop to India is what the wheat crop is to most other countries: it is the staple food for large numbers of the people. The success of the Indian crop depends largely on the monsoon rains of July and August. There are three crops in India, the chief of which is the winter crop. Planting of this takes place during May to August, and harvesting begins in the following December. The largest part of the crop is grown in Bengal, and next in importance is Madras. The 1938 crop was officially estimated at 26,544,000 tons of 2,240 lb., which was one million smaller than in the preceding year, although it was slightly above 25,700,000 tons, the average of the five years 1933–37. Japan's crop totalled 9,211,000 tons, compared with 9,353,000 in 1937 and 7,980,000 tons in 1936.

About average crops were harvested in the surplus-producing countries of Burma, Indo-China, and Siam. Their combined surplus for export in 1938 was estimated at six million tons, compared with 6,300,000, the average for the five years 1933–37. (G. P. B.)

GREAT BRITAIN AND NORTHERN IRELAND, UNITED KINGDOM OF. Anyone who essays to write under this title cannot but be puzzled as to the limits of his subject. Nearly everything of importance that has happened to Great Britain in 1938 has, so to speak, happened elsewhere and hit the country from outside. It would be hard to find a year, since the death of Lord



Topical Press]
MR. EDEN LEAVING THE FOREIGN OFFICE AFTER HIS RESIGNATION IN FEBRUARY, 1938



Fox Photos]
AIR RAID PRECAUTIONS DEMONSTRATION AT NEWPORT, JUNE, 1938

Palmerston, in which strictly domestic British history had been more humdrum and less dramatic; no keen party warfare except over foreign policy, no ministerial crisis—except the resignation of a foreign secretary; no big extension of the administrative activities of the State—except in connexion with A.R.P. (Air Raid Precautions). Practically all public interests, public activities, all that is conventionally called "history", have been concentrated on two tasks, neither of which in a sensible world would occupy any time at all: the task of avoiding war and the task of preparing to wage it effectively if one cannot avoid it.

It therefore follows that the greater part of this article must be devoted to a general survey of outstanding events abroad, and more particularly their repercussions on the fortunes of Great Britain. Among such events those in Germany take the foremost place. There were not many months of 1938 in which something new and disturbing did not come out of Germany.

The Extinction of Austria. The first of these events, without which perhaps the others would not have occurred, was one of those purges which we have learnt to regard as inevitable growing-pains of dictatorship. At the beginning of February the German minister of war, the commander-in-chief, and thirteen generals were reported to have resigned. Hitler himself took over the command of the army, and Ribbentrop succeeded Neurath as foreign secretary. Thus ended a period of internal tension with the complete victory of the more aggressive forces within the Nazi system. The results were soon apparent. On Feb. 12 Hitler summoned Schuschnigg, the Austrian Chancellor, to his residence at Berchtesgaden, just outside the Austrian frontier, and demanded the appointment of an Austrian National-Socialist, Seyss-Inquart, as minister of the interior. For many months previously the Nazi agitation within Austria, encouraged from across the frontier, had been embarrassing the Schuschnigg government. To accept Hitler's demand was to surrender, in effect, the control of Austrian police: to refuse it meant extinction. Schuschnigg accepted, but it may be doubted whether the German government intended this Berchtesgaden agreement to be more than what Bismarck once called a papering over the cracks. Offensive utterances from the German press, which is in effect the German government, continued. On March 9 Schuschnigg attempted to escape from the toils by holding a plebiscite. On the 11th the two National Socialist members of the Austrian cabinet, acting on orders from Germany, demanded the calling off of the plebiscite, whereupon Schuschnigg resigned. On the 12th, German troops entered Austria. On the 13th Austria was annexed to Germany. Schuschnigg spent the remainder of the year a prisoner.

To the historically minded this event suggested long views. The wheel had come full circle Once again what had been established by a Holy Roman Emperor nearly a thousand years before as an Ost-Mark, or eastern frontier province, had resumed that humble role, after passing through a bewildering variety of phases, in one of which the Austrian Habsburg dynasty had sought to dominate, unite, and Catholicize the miscellany of German provinces, and in another of which these same Habsburgs had made a multi-national Empire which nearly but never quite reached the Black Sea and the Aegean. What was more practically important was the reflection that these same Austrians of post-war Austria were Germans, and that (quite apart from the ridiculous statistics of the totalitarian plebiscite which followed) the majority of them doubtless welcomed this inevitable ending of an impossible experiment. The post-war Austria had never stood on its own legs, and many of those who now denounced Hitler's brutal methods had nineteen years before denounced the Allied victors at Versailles for refusing the *Anschluss* (union) then demanded. There was, of course, an Austrian minority, and under German rule minorities get no mercy. Vienna contains (or contained) more Jews than any other German city, having one of the three largest Jewish urban aggregations on the Continent.

It was a striking fact that the fulfilling of this item in the programme of *Mein Kampf* exactly coincided in date with a temporary eclipse of Germany's chief continental rivals. In France M. Chautemp's government fell on March 10, and was not replaced till the 13th by a very weak government of M. Blum, which, after 26 days, gave place to the government of M. Daladier. From March 2 to 13 Russia was occupied with one of those extraordinary State trials which, whatever may be their real significance, have undermined the efficiency of the country, decreased the attractions of communism, and made people wonder what manner of creature Stalin may really be.

Mr. Chamberlain's Foreign Policy. Not for these reasons, but on the merits of the case the British government accepted a change of frontiers which, however regrettable

the manner of its making, was clearly acceptable to the majority of the inhabitants concerned None the less, the much more difficult question of the three million Sudeten Germans in Czechoslovakia would obviously brook no long delay, and to this subject Mr. Chamberlain addressed himself in a speech on March 24 He categorically refused to give any guarantee either to Czechoslovakia or indirectly to France that Great Britain would maintain, if necessary by war, the integrity of the former country. None the less, he pointed out that if war broke out on such an issue, "it would be well within the bounds of probability that other countries besides those which were parties to the original dispute would almost immediately become involved".

When he spoke these words Mr Chamberlain was already in the public eye, the minister in charge of British foreign policy Mr. Eden, who had occupied that position ever since the downfall of Sir Samuel Hoare on the Abyssinian question in Dec. 1935, resigned on Feb 20 The question at issue had apparently been Mr. Eden's reluctance to respond to Mussolini's demand for the negotiation of an Anglo-Italian Treaty. Principal author of the sanctions policy which had antagonized Italy without saving Abyssinia, Mr. Eden was too closely identified with an "ideological front" to suit Mr Chamberlain, who was determined, if possible, to break down the fatal cleavage between democracies and dictatorships Lord Halifax succeeded Mr. Eden as foreign secretary, but left the limelight to his chief, which was perhaps as well in an age of "Fuhrers", "Duces", and national personifications.

Hitler and Czechoslovakia. If Hitler showed himself impatient to apply his methods to Czechoslovakia, his excuse would be that in this matter the Sudeten Germans had been living on broken promises for twenty years. Masaryk and Beneš in 1918 had used the defeat of Germany and the break up of Austria-Hungary to establish a Czech predominance over all Bohemia, as well as other provinces farther east. The Czech government promised, from the first, many things to their German and other minorities, and indeed they treated them very much better than, for example, Hitler's government treated Jews—but they did not fulfil their promises. The Sudeten Germans, a quiet, unambitious folk, who had once been ruled from Vienna but never from Berlin, had no particular desire for absorption in the Third Reich, but they undoubtedly pined for the removal of many petty economic and administrative injustices; and the overwhelming might of the New Germany, Hitler standing behind their local leader Henlein—"in shining armour" as an earlier Führer said on a famous occasion—could hardly fail to turn despair into hope and petitions into demands. This was a situation exactly suited to Hitler's programme. Posing as a champion of distressed minorities, a cause against which few Englishmen not blinded by ideological passions would fight with an easy conscience, he could not only add three more million Germans to the Reich, and gratify Hungary and Poland by allowing them also their pounds of flesh (or parts of them) at the expense of the doomed republic; he would at the same time inevitably leave what remained of Czechoslovakia in so raw, bleeding, and defenceless a condition, that what had been an offensive outpost of the Franco-Russian alliance would henceforth inevitably be a humble satellite of Germany. The narrowed waist of the state could be pierced by an "all-German" road uniting Breslau and Vienna, and its long tail might be made the avenue of a new German eastward expansion, like that summarized before the war in the phrase Berlin–Baghdad—though assuredly the new expansion will not get to Baghdad unless Ataturk's successor proves a failure.

Anglo-French Relations. It may be some years before the earlier stages of Anglo-French reactions to the Czech problem can be accurately traced. At the end of April the French prime minister and foreign secretary visited London. It is asserted by some authorities that Europe was on the verge of war on May 20 The Sudeten leader, in his new Hitler-fed mood, made negotiations with Prague for a settlement within Czechoslovakia almost impossible. Hitler and Mussolini had recently staged an exhibition of totalitarian union in Rome. Pressure exercised on the government of Dr Beneš moved it several stages farther towards the concessions it had suicidally opposed for nearly twenty years, and it may have been at this stage that France discovered that she could not fulfil, and would prefer not to try and fail to fulfil, the pledges she had given to Czechoslovakia. One of the tasks of Mr Chamberlain in the months that followed was to use the prestige of his government (which had plenty of prestige and no pledges to break) to cover the withdrawal of the French government, embarrassed by reiterated pledges and enjoying no more prestige than French governments usually enjoy, from a position which, if held, would have meant general war and the worst of fates for all, and not least for the Czechs in the forefront of the battle, separated from their allies by the full width of Germany and from Russian support, whatever that would have been worth, by the width of Poland or Rumania.

Events leading up to the Crisis. The usual German methods, subjecting the threatened state to internal disturbance and a press campaign of incredible virulence, were pursued throughout the midsummer. The dispatch of the Runciman mission at the end of July seemed at the time a happy stroke of policy, and produced an immediate lowering of temperature; for even at that date, according to the Sudeten leader Henlein, the question was still one of a greater or less degree of German autonomy within the old Czech frontiers. In his final report, written on terminating his mission in the middle of September, Lord Runciman expressed a doubt whether any solution on these lines could have proved feasible at this late stage. In any case, Hitler took control of Henlein and assured its failure in advance. On Aug. 13 German army manœuvres on an



Topical Press]
MR. CHAMBERLAIN LEAVING HESTON FOR THE MUNICH CONFERENCE

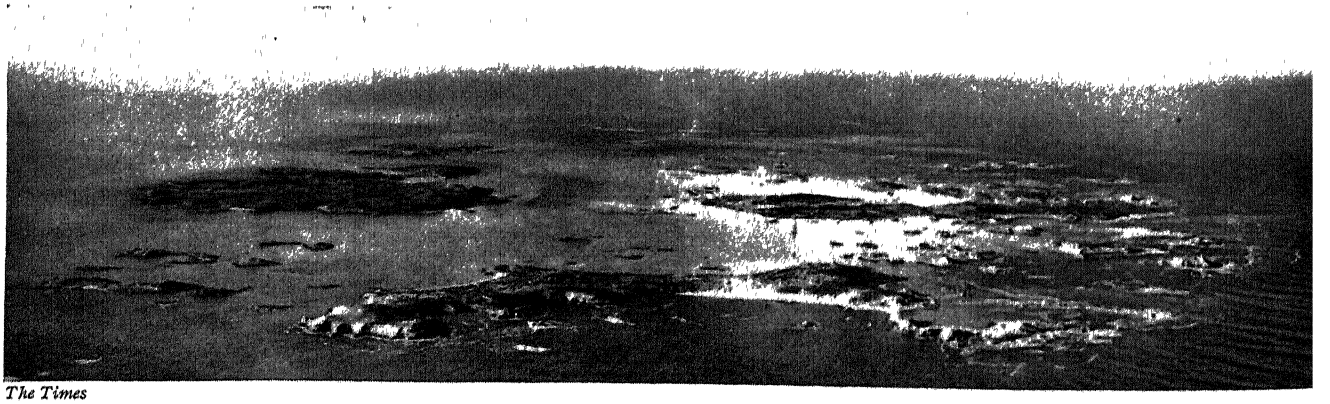
unprecedented scale were begun, and from this moment Germany enjoyed, under a thin veil of annual routine, the advantages of mobilization. On Sept. 5 the Fuhrer addressed the annual party rally at Nuremberg in terms expressive of an almost insane hatred for Dr. Beneš and the Czechs. On Sept. 7 *The Times* published a leading article tentatively suggesting that a revision of Czechoslovakian frontiers might turn out to be the safest and fairest solution of the problem. The article at once became notorious in the eyes of those who disagreed with it, but in retrospect what seems remarkable is that a weighty statement of this view should have been delayed so long. Mr. Chamberlain is not the sort of statesman that takes his policy from newspapers, and the counter-suggestion that he directly or indirectly inspired the writing of the article has been categorically denied. None the less, the article and the flood of comment that it let loose gave the public a brief week of preparation for the policy Mr. Chamberlain was to pursue on his visits to Germany, the first of which took place only eight days later.

Mr. Chamberlain's Visits to Germany. On Sept. 12 Hitler undertook to support with arms the claims of the Sudeten Germans. On the next day the Czech government ordained martial law in the Sudeten area. With war staring him in the face, Mr. Chamberlain flew to Berchtesgaden on the 15th. At this meeting Hitler revealed for the first time a plain demand for the cession to Germany of all districts with a German majority. Having secured from his own government and the rulers of France and Czechoslovakia an acceptance in principle of this demand, Mr. Chamberlain returned to meet Hitler, this time at Godesberg, on the 22nd, to be confronted with the demand that the new frontiers should be fixed by Germany alone, and that they should be occupied by the German army with no more than one week's delay. For an unforgettable week war seemed inevitable, and Mr. Chamberlain's speech in the House of Commons seemed in strict succession to that of Sir Edward Grey on Aug. 3, 1914, until its sensational conclusion announcing Hitler's invitation to the Four Power Conference at Munich. The Munich Agreement was signed on the 30th and accepted by Czechoslovakia on the same day.

After the Crisis. For the moment the sensation of escape expressed itself in an ovation to Mr. Chamberlain, in Great Britain and over the greater part of the world, such as perhaps no statesman had ever received before. But the meeting of parliament a few days later revealed a deep and bitter cleavage of opinion in which, for example, Mr. Churchill and the Labour leaders found themselves at one in denouncing a policy which had led to peace only through humiliation. There had undoubtedly been a resounding triumph, not only for Germany, but also for German methods, which are in themselves incompatible with international security. On the other hand, a large and indefensible section of the Versailles settlement had been removed without war, and the intensity of the desire for peace of all peoples, not excluding the Germans, had been made plain in a manner that even dictators could not fail to see. Unhappily, the leading events of the autumn in Germany, the hideous persecution of the Jews and the press campaign of vilification directed against British statesmen showed that there had been no change of heart so far as the rulers of Germany were concerned. Before passing to other subjects, one may mention that British charity, having raised a fund of £300,000 for Czechoslovakian relief in the autumn, contributed another £250,000 in the last three weeks of the year in response to Lord Baldwin's appeal for the Jews.

The narration of these events has taken up much of the space allotted to this article, but not more, it may be hazarded, than they will occupy relatively to the rest in the eyes of posterity. These other events must now be briefly reviewed, first those in the field of foreign policy and finally domestic events.

Anglo-Italian Agreement. In the affairs of Central Europe, Hitler secured and maintained the initiative. In the Mediterranean the British government enjoyed greater freedom in the pursuit of its own policy. The chief result of this policy was the Anglo-Italian Agreement signed in April, a month after the German occupation of Austria, and brought into force in November, after a "token" detachment of 10,000 Italian legionaries had been withdrawn from Spain. Hostility between the two countries dated from the ill-fated "sanctions" directed against Italy by members of the League of Nations in the autumn of 1935, with the object of preventing the conquest of Abyssinia. Since that time Italy had sought a revenge by Arabic broadcasts designed to stimulate the Arab revolt against British government in Palestine. Italian activities were also perhaps the principal obstacle to the enforcement of the British policy of non-intervention in the Spanish civil war. The agreement dealt with these questions, and with questions of sea power and security in the Mediterranean. Great Britain undertook to secure and subsequently secured the recognition by League members of the new Italian Empire in Africa. When the agreement was signed it was hoped that the Spanish civil war was nearly over, and the agreement was to come into force only when all Italian forces in Spain had been withdrawn. This seemed likely to mean an indefinite postponement which



The Times

THE SCILLY ISLES



Topical Press]
L TO R . M BONNET, M DALADIER, AND GENERAL GAMELIN, AT NO 10, DOWNING STREET, SEPT. 26, 1938

neither country desired, and, as mentioned above, a "token" withdrawal of 10,000 men was accepted instead

The Spanish Civil War. As for the Spanish war, at the end of the year General Franco, who had obstructed all plans for agreed withdrawal of foreigners from both sides, seemed once again to be pressing forward, but his ambitions involved him in a curious dilemma. It was difficult to crush Barcelona unless he enjoyed the belligerent rights which would entitle him to enforce a naval blockade He can only secure such belligerent rights by sending home his Italian aircraft, which seem as indispensable for his purpose as belligerent rights.

Italy and France. Improved relations between Italy and Great Britain have not been followed, as was hoped, by improved relations between Italy and France. Indeed, in the last weeks of the year the Italian government let loose a "spontaneous" popular demand for the surrender to Italy of Tunisia, Corsica, and Nice, which may prove a smoke screen to cover more reasonable demands for better trading facilities at the French port of Jibuti, where the Abyssinian railway reaches the sea.

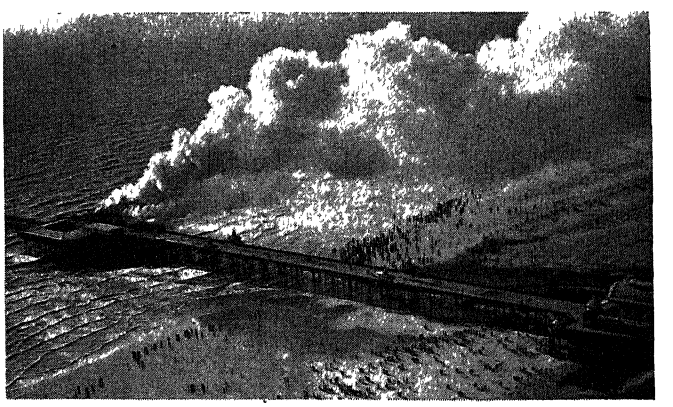
Palestine. The problem of doing justice to the conflicting claims of Jews and Arabs in Palestine continued to prove insoluble. First, British incompetence in tolerating the Arab insurrection and later, British brutality in suppressing it, were favourite subjects of German propaganda. The Royal Commission, under the chairmanship of Lord Peel, had in the previous year reported in favour of a scheme of partitioning the country between the Jews and the Arabs, but a second Commission, sent out in 1938 to study the details involved, reached the conclusion that any scheme of partition would prove financially unworkable, all the wealth being in the Jewish areas. Partition was therefore abandoned and the government fell back on the plan of a Round Table Conference in London, to which not only Jews and Arabs of Palestine, but representatives of Jew and Arab interests from outside, have been invited

The Far East. In the Far East the Japanese invasion of China has continued, and the invaders have occupied Canton and Hankow without, apparently, bringing a Chinese collapse any nearer. The future of British interests in China is inevitably problematical, but at least the long-prepared Singapore naval base was, in February, formally inaugurated.

Anglo-Irish Agreement. Coming nearer home, the Anglo-Irish Agreement, signed in April, brought to an end to the advantage of both parties a quarrel which had begun five years before, when Mr. de Valera, on acceding to office, proceeded to withhold the land annuity payments agreed under the Treaty of 1921 In Northern Ireland the fear that Mr de Valera would raise the question of partition in the negotiations with Great Britain led Lord Craigavon to advance the date of the next election and thus give one more exhibition of the strong majority feeling in the six counties against union with the Free State. This was perhaps unnecessary, and it certainly seems to have been regarded by the Nationalists in the six counties as provocative In a subsequent speech, Mr de Valera refused to admit the finality of the partition, but disclaimed any desire to end it by any but pacific and constitutional means.

Turkish and American Agreements. In May an Anglo-Turkish agreement marked the steady progress that had been made for some years past in the political and economic relations of Great Britain with one of the best administered of the Dictator States, a State which virtually owed its existence to its successful defiance of a part of the post-war settlement for which Great Britain had been particularly responsible. Again, in November the long-negotiated Anglo-American Commercial Treaty was at last brought to a completion. Valuable as a moral gesture at a moment when the German press was insulting the governments of both countries, it also involves concessions to British exports which should prove of very substantial importance. These four treaties, with Italy, the Irish Free State, Turkey, and the United States, should be set against the gloomy and menacing impression which other and more conspicuous events have left on the public mind.

Rearmament. At home the time and energies of parliament have been occupied, to an extent unprecedented except during the Great War years, with debates on foreign affairs and the acceleration of rearmament in all its branches; most of all perhaps the novel and baffling problems of what can hardly be called rearmament, since it is an entirely new undertaking, namely, air-raid precautions. Whether the crisis of September found our air-raid precautions as rudimentary and chaotic, either by absolute standards or in comparison with those of other countries, as critics suggested, is a matter of dispute There is no dispute that the crisis enormously quickened the study of the problem and the execution of appropriate measures. It may be safely said that no degree of such precautions will ever be immune from criticism. War, if it comes, must be horribly destructive, and, under modern conditions, the civilian population at home will be in the firing line as well as the fighting services The budget raised the income-tax to 5*s.* 6*d.*, and towards the end of the year the Chancellor of the Exchequer announced that the government's authority to borrow would



Topical Press]
BLACKPOOL: THE PAVILION ABLAZE, JUNE 19, 1938

be extended. Sir John Anderson, an ex-civil servant and former Governor of Bengal, was appointed Lord Privy Seal, and put in charge of air-raid precautions. A voluntary National Service Register is to be compiled. The "Sandys question", in itself rather a storm in a tea-cup, illustrated the keenness of a private member to expose the alleged inefficiency of a war minister, and the difficulty of reconciling the rights of M.P.'s with the terms of the Official Secrets Act.

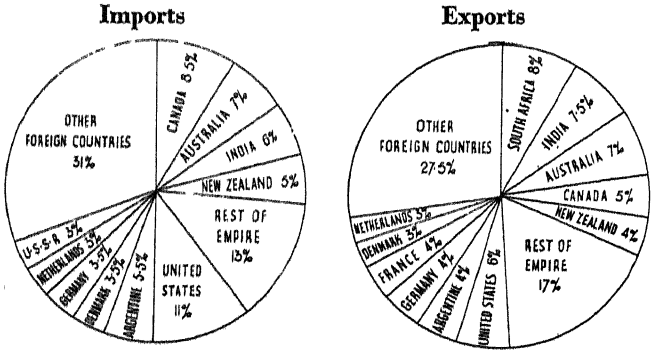
Legislation and Industry. In the sphere of legislation unconnected with danger from abroad, the most notable measures were a keenly contested Coal Act, transferring mining royalties from private ownership to a Coal Commission; an Act extending the powers of the Milk Marketing Board, and an Act to expedite the campaign against urban overcrowding.

Industrially the year was a quiet one. Trade was naturally affected by the disturbed conditions, and the figures of unemployment rose, though not as greatly as was at one time feared. The number unemployed was about 150,000 more at the end of the year than the beginning, an increase of about nine per cent. The movement for granting weekly wage-earners holidays with pay continued its rapid expansion, assisted by an Enabling Act. Indeed, it is becoming apparent that, with so many more millions taking annual holidays, it is quite impossible that they should all take their holidays at the acceptable places (mostly on the coast) at the same time, and proposals are advanced for some system of "staggering" the holiday season by spreading it all over the summer months—which is not as easy as it may sound.

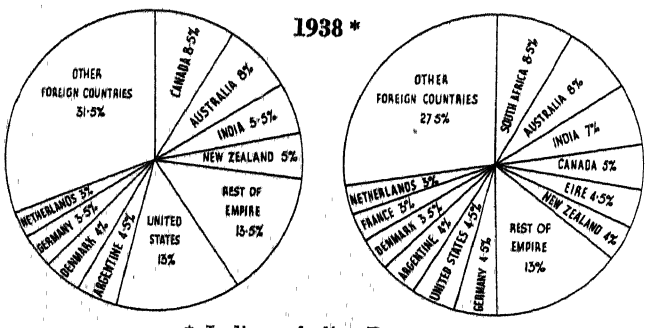
The Glasgow Exhibition. In Scotland, the most notable event of the year was the extremely successful Glasgow Exhibition, which was attended by over 12,000,000 persons, three times the total population of Scotland—though of course the "persons" attending the Exhibition were not all different individuals. (D. C. So.)

United Kingdom Trade

1937 (Merchandise only)



1938 *



* India excluding Burma.

Area and Population:
Area 93,991 sq. miles
Population (est. June 30, 1938) 47,485,000 (England and Wales, 41,215,000).
Chief Towns (pop. June 30, 1937): London, cap. 4,094,500; Glasgow (Sept. 30, 1938), 1,126,000; Birmingham, 1,029,700; Manchester (including Salford), 938,300; Liverpool, 836,000; Sheffield, 518,200; Leeds, 491,860; Edinburgh (Sept. 30, 1938), 469,700; Belfast, 438,112; Bristol, 415,100; Hull, 319,400.
Ruler. King George VI.
Premier. Rt. Hon. Neville Chamberlain.
Language. English
Religion. Christian (mainly Protestant Episcopal Church).

Production 1937:

Wheat	1,533,200 metric tons
Barley	668,100 " "
Hops	11,900 " "
Rye	7,100 " "
Oats	1,876,400 " "
Potatoes	4,994,900 " "
Beet Sugar, refined	383,200 " "
Flax (Northern Ireland)	4,300 " "
Wool	48,500 " "
Artificial Silk	54,294 " "
Shipbuilding, tonnage launched (1937)	917,348 gross tons
Shipbuilding, tonnage launched (1938)	1,018,122 " "
Shipbuilding, under construction (Dec. 31, 1938)	779,762 " "
Coal	245,053,000 metric tons
Iron Ore	4,200,000 " "
Pig Iron	8,633,000 " "
Steel	13,172,000 " "
Pig Iron (1938) 6,763,000 long tons Steel (1938) 10,394,000 " "	} 1 metric ton = ·984 long tons).
Lead Ore	26,500 metric tons
Aluminium	19,400 " "
Superphosphates of Lime (1936)	462,000 " "

England and Wales *

	Thousands of English tons	
	1937	1938
Wheat	1,393	1,855
Barley	576	803
Oats	938	1,069
Potatoes	3,126	3,486

* *Note*: One metric ton = ·984 English ton: *see* Scotland, Northern Ireland.

Industry and Labour:

Index of Industrial Production, av. (1937)	123·7
(average 1929 = 100) av. (July-Sept. 1938)	108·5
Index of Employment, average (1937)	112·4
(average 1929 = 100) Oct. 31, 1938	111·5
Number Employed (Dec. 15, 1938)	12,263,000
Number Unemployed (Dec. 15, 1938) (total)	1,821,372
" " " " (wholly)	1,474,019
" " average (1937) (wholly)	1,277,928

Overseas Trade: million £

Imports, merchandise (1937)	1027·8
" " (1938)	920·4
Exports, domestic (1937)	521·4
" " (1938)	470·9
Re-exports (1937)	75·1
" (1938)	61·6
Excess of Imports, merchandise (1937)	431·3
" " " " (1938)	387·9
Bullion and Specie, net imports (1937)	90·0
" " " net exports (1938)	73·9

Communications:
Roads (1936–37), class I, England and Wales 20,508 miles
" " class II, " " " 12,959 "

305

Roads (1936–37), class I, Scotland . . 6,634 miles
,, ,, class II, ,, . . 3,971 ,,
,, (1937) Northern Ireland . . 13,000 ,,
Railways, Great Britain, mileage open for traffic (Dec. 31, 1937) . . . . . 20,080 miles
Railways, Northern Ireland (1937) 622 miles standard gauge
Airways (1937) mileage flown . . 10,773,00 miles
,, ,, passengers carried . . 244,400
,, ,, cargo carried . . 3,961 tons
Empire Services (Imperial Airways), traffic ton miles 1936–37, 2,238,441; 1937–38, 4,858,244. Passengers carried, 1936–37, 8,012; 1937–38, 9,661.
Shipping, total tonnage (June 30, 1938) . . . . . 17,780,900 tons gross
Shipping, entered with cargo (1937) 70,419,858 tons net
Shipping, cleared with cargo (1937) 61,390,371 ,, ,,

Finance and Banking:

Revenue, ordinary, receipts (1937–38) . £872,580,000
Expenditure, ordinary, actual (1937–38) . £843,794,000

ESTIMATED REVENUE 1938–39

	£	£
Income-tax	341,250,000	
Sur-tax	62,000,000	
Estate Duties	88,000,000	
Stamps	24,000,000	
National Defence Contribution	20,000,000	
Other Inland Revenue Duties	1,250,000	
Total Inland Revenue		536,500,000
Customs	227,950,000	
Excise	116,150,000	
Total Customs and Excise		344,100,000
Motor Vehicle Duties		36,000,000
Post Office net receipts		8,670,000
Post Office Fund		2,400,000
Crown Lands		1,330,000
Receipts from Sundry Loans		5,250,000
Miscellaneous		10,500,000
Total Ordinary Revenue		£944,750,000

ESTIMATED EXPENDITURE 1938–39

	£
Interest and Management of National Debt	230,000,000
Payments to Northern Ireland	8,900,000
Miscellaneous Consolidated Fund Services	3,200,000
Defence (Army, Navy, and Air Force)	*234,159,000
Pensions (Army, Navy, and Air Force)	19,089,000
Education	61,847,00
Social Services (Health, Labour, etc.)	172,331,000
War and Civil Pensions	43,094,000
Other Civil Supply Services	147,494,000
Margin for Civil Supplementary Estimates	10,000,000
Tax Collection (including Pensions £1,248,000)	14,284,000
Total Ordinary Expenditure	£944,398,000

* Exclusive of armaments, estimated at £90,000,000, to be met from issues under the Defence Loans Act, 1937.

Public Debt (National) Mar. 31, 1938 £8,026,127,000

Bank of England Return Dec. 28, 1938.

ISSUE DEPARTMENT

	£		£
Notes Issued:		Govt. debt	11,015,100
In circulation	504,726,803	Other govt. securities	218,650,389
In Banking Dept.	51,688,925	Other securities	49,130
		Silver coin	285,381
		Fiduciary issue	230,000,000
		Gold coin and bullion	326,415,728
	£556,415,728		£556,415,728

Note: Gold valued at £4 5*s.* 0*d.* an ounce.

BANKING DEPARTMENT

	£		£
Capital	14,553,000	Govt securities	69,216,164
Rest	3,413,432	Other securities:	
Public deposits	15,937,522	Discounts and advances	28,538,950
Other deposits		Securities	21,455,849
Bankers	101,027,025	Notes	51,688,925
Other accounts	36,754,756	Gold and silver coin	785,847
	£171,685,735		£171,685,735

Exchange Rates (value of £ sterling in U.S.A. dollars and French francs):

(Dec. 31, 1937) $4.99¾ : francs . . . 147¼
(Dec. 31, 1938) $4.64⅜ : francs . . . 176¾

Education 1937:

Elementary, England and Wales, Departments under separate head teachers 29,359. scholars on rolls, 5,123,000.
Elementary, Scotland—schools 2,898: scholars 631,669.
,, Northern Ireland, schools 1,727: scholars 194,347.
Secondary, England and Wales, grant-aided schools, 1,393: scholars 466,245.
Secondary, Scotland, grant-aided schools, 252: scholars, 151,988
Secondary, Northern Ireland, grant-aided schools, 76, scholars, 13,683.
Universities, students: England and Wales 49,154 (full time, 39,809); Scotland 13,358 (full time, 9,880), Northern Ireland 1,587.

Defence:

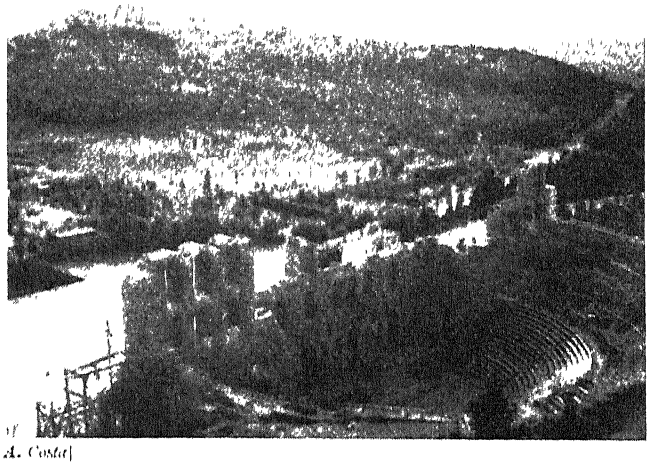
Army (Dec. 31, 1938), Regular, 201,394 officers and men.
,, (Dec. 1, 1938), Territorial, 200,190 officers and men, including 47,250 in anti-aircraft units.
Navy (Dec. 31, 1938), personnel 119,000 officers and men.
,, ,, vessels actually in commission:
15 capital ships; 62 cruisers; 7 aircraft carriers; 2 seaplane carriers; 172 flotilla leaders, destroyers, and torpedo boat destroyers; 58 submarines.
Fleet Air Arm (Dec. 31, 1938), personnel 3,000 officers and men.
Royal Air Force (Dec. 31, 1938), personnel 96,000 officers and men: first-line aircraft 1,750.

Miscellaneous:

Motor vehicles licensed (Sept. 30, 1938), cars 1,944,394; hackney vehicles (taxis, buses, coaches, etc.) 87,730; commercial vehicles 590,397; cycles 462,375: total 3,084,896.
Wireless receiving-set licences (Dec. 31, 1938) 8,928,900
Telephones, number of subscribers (Dec. 31, 1938), 3,185,000 (6·9 per 100 inhabitants). (W. H. W.)

GREECE. On Jan. 28, twelve party leaders, including four ex-premiers, and three officers were arrested and interned, following the issue of a manifesto which criticized the government and called for the re-establishment of political freedom. Other deportations followed, including that of M. Michalakopoulos. General Metaxas now declared that he would institute a regime of "entirely pitiless severity", and further repressive laws followed, the regime becoming progressively more Fascist. The repression was accompanied by considerable social legislation and the inauguration of public works, civil and military. A further revolt in Crete, led by a nephew of the late M. Venizelos (July 29), was quickly and easily suppressed.

A new treaty of friendship and neutrality was concluded with Turkey (April 27) and a pact with Bulgaria (*q.v.*) on July 31. Following the latter, Greek troops occupied the demilitarized zone in West Thrace (Aug. 21). (C. A. M.)



A. Costa]

ATHENS. VIEW FROM THE ACROPOLIS OF ADRIAN'S THEATRE AND PHALERON BAY

Area and Population :
Area 50,180 sq. miles.
Population (est. Dec. 31, 1937) 7,013,000.
Chief Towns: Athens (392,781), Salonica (236,524).
Ruler. King George II.
Language. Greek.
Religion. Christian (Greek Orthodox, 96 per cent).
Production 1937 :

Wheat	881,100	metric tons
Barley	225,100	,, ,,
Oats	141,600	,, ,,
Rye	65,500	,, ,,
Maize	269,200	,, ,,
Potatoes	158,600	,, ,,
Tobacco	64,200	,, ,,
Wine	3,570,000	hectolitres
Olive-oil	179,100	metric tons
Cotton	16,700	,, ,,
Lignite	13,108	,, ,,
Iron Ore	30,049	,, ,,

Industry and Labour :
Index of industrial production, average (1937) (1929 = 100) 151·2; ,, (June 1938) 164·8
Workers insured against sickness, accidents, etc. (1937) 254,000
Overseas Trade, merchandise, 1937 :

Imports	15,204,363,000	drachmæ
Exports	9,555,293,000	,,

Communications 1937 :
Roads, fit for motor traffic 7,708 miles
Railways, open for traffic 1,672 ,,
Airways: passengers carried, 7,615; freight, 105 metric tons.
Shipping, gross tonnage (June 30, 1937) 1,855,000
Finance and Banking :

Revenue (1937–38)	16,093,889,112	drachmæ
Expenditure (,,)	15,467,306,101	,,
Public Debt (Dec. 31, 1937)	51,061,240,505	,,
Notes in Circulation (Dec. 15, 1938)	6,939,000,000	,,
Gold and Gold Exchange Reserve (Dec. 15, 1938)	3,778,000,000	,,

Exchange Rate (1938) 540–555 drachmæ = £1 stg.
Education 1935–36 :
Elementary: schools, 9,117; scholars, 995,583.
Secondary: ,, 548; ,, 79,558.
Defence 1938 :
Army: 4 corps, comprising 13 divisions and 1 division of cavalry.
Navy: 2 cruisers, 21 destroyers and torpedo boats, 4 mine-layers, 6 submarines
Air Force. 10 squadrons of three flights, each flight comprising 4 aeroplanes.

GREENLAND. Explorers were active in 1938 The Soviet scientists, Papanin, Fedorov, Shirshev, and Krenkel, who started from near the North Pole the previous May, and were drifting southwards on ice-floes parallel with the east coast, were hazardously rescued, with their instruments and valuable records (Feb. 19), when about thirty miles off Liverpool Coast, Jameson Land. Dr. Lange Koch began (April) a 6,000-mile flight over Peary Land, and Danish explorers also left (September) for northern Greenland. A third Oxford expedition sailed (June) for glacialistic work on the south-west coast.

Area and Population :
Area *c.* 840,000 sq. miles.
Population (Census 1930) 16,630 (816 Europeans).
Ruler. King Christian X of Denmark.
Overseas Trade 1937 :

Imports	2,428,000	kroner
Exports	1,694,000	,,

Finance 1936–37 :

Revenue	3,117,000	kroner
Expenditure	4,959,000	,,
Currency	Danish kroner 22·40 = £1 stg.	

GRENADA : *see* WINDWARD ISLANDS.

GREYHOUND RACING. By 1938 there were 61 race-courses in Great Britain affiliated to the National Greyhound Racing Society and running under the rules of the National Greyhound Racing Club, and this number is likely to increase during 1939. In and around London there are some 22 tracks, of which fourteen come under the club's rules; attendances at the 22 were approximately 11,000,000 for the year, and at all tracks throughout the country (approximately 150) about 30,000,000. Since the club was formed in 1928 its registry department has collected details of over 60,000 greyhounds and the names of over 30,000 owners; during the year its new registrations included over 2,000 owners and 4,000 greyhounds.

Prize money distributed shows an increase during 1938, and now amounts, on N.G.R.C. tracks alone, to over £400,000 per annum. Many important races carry over £1,000, the richest (£3,500) being the "White City Stakes", an invitation race for the best six greyhounds of the year, run annually at the White City Stadium, London. The following table shows the results of the principal events during the year :

Race	Stadium	Greyhound
Grand National, 525 *yds., hurdles*	White City, *May* 21	GROSVENOR BOB, *Mr. Flintham*
Gold Collar, 440 *yds., flat*	Catford, *May* 28	JUNIOR CLASSIC, *Mr. Cleaver*
Greyhound Derby, 525 *yds., flat*	White City, *June* 25	LONE KEEL, *Mr. Walsh*
Scurry Gold Cup, 400 *yds., flat*	Clapton, *July* 23	ORLUCK'S BEST, *Mr. Leach*
Laurels, 500 *yds., flat*	Wimbledon, *Aug.* 12	BALLYHENNESSY SANDHILLS, *Mrs. Cearns*
Oaks, 525 *yds., flat (bitches)*	White City, *Sept.* 10	QUARTER DAY, *Mr. Flintham*
St. Leger, 700 *yds., flat*	Wembley, *Sept.* 19	GRETA ROSARY, *Mrs. Goodchild*
Cesarewitch, 600 *yds., flat*	West Ham, *Dec.* 12	BALLYJOKER, *Mrs. Cearns*

Racing is flourishing in the U.S.A., Australia, and France. In France the sport is controlled by the State through a body analogous to the N.G.R.C.

GREY OWL (Wa-Sha-Quon-Asin), North American Indian author and naturalist, died at Prince Albert, Saskatchewan, on April 13, 1938. He was chief conservation officer of the Prince Albert National Park. Much uncertainty exists as to the date and place of his birth, and even as to his Indian blood, among the various opinions held are that he was the son of a Scotsman named MacNeill and an Apache woman, that he was born in Mexico on Sept 19, 1888; that he was the son of a planter named Belaney and was born at Hastings on Sept. 18, 1888 Whatever may be the truth, it is a fact that Grey Owl was accepted as one of themselves by the Indians with whom he associated, including his Indian wife. Among his publications were *The Men of the Last Frontier* (1932), *The Adventures of Sajo and her Beaver People* (1935), and *Tales of an Empty Cabin* (1936).

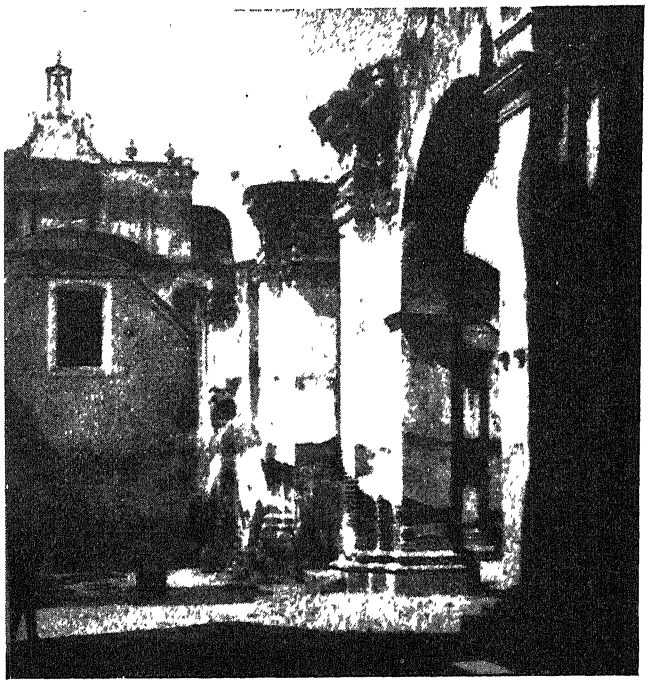
GUADELOUPE, a French West Indian colony comprising the large adjacent islands of Basse-Terre and Grande-Terre and several minor islands of the Windward group, governor, Felix Éboué. Area 688 sq. miles, population (official 1936) 302,659, chief cities (with 1931 populations) Basse-Terre, the capital, 9,268, Pointe-à-Pitre, 30,465, Le Moule, 17,107. During 1938 the general council approved a programme of public works calling for expenditure over a period of years of 278 million francs, including large outlays for highway improvement, sanitation, harbour development at Pointe-à-Pitre, and low-cost housing. Imports in 1937 were 194,900,000 francs (61·4 per cent from France), exports 294,500,000 francs (97·7 per cent), and in the first eleven months of 1938, 198,400,000 francs and 294,200,000 francs, respectively. Imports are foodstuffs, textiles, beverages, and lumber; exports are sugar and rum, bananas, vanilla, and cacao. (L. W. Be.)

GUAM, a possession of the United States of America and the largest and most populous island of the Marianas, lies at the southern end of that group, approximately 1,500 miles east from Manila; area about 225 sq. miles; population on July 1, 1938, 22,314, including 20,880 natives of Guam who are called Chamorros; the remainder are foreign-born and personnel of the United States Naval Establishment. The capital and only city is Agana.

The island was a Spanish possession until 1898, when it was captured by the United States. Since acquisition it has been under the jurisdiction of the Navy Department, with a naval officer commissioned as governor.

Public schools had an average attendance of 4,066 during 1937–38. All medical attention is given by the naval medical officers, who treat the people free of charge. Copra is the only export of importance: 1,655 tons were exported during the fiscal year 1938.

GUATEMALA, the largest of the Central American republics; language, Spanish; capital, Guatemala city; President, Jorge Ubico. Area 48,290 sq. miles; population (est. Dec. 31, 1937) 2,466,227. The leading cities are: Guatemala City, 116,000 (est.); Quezaltenango, 37,000 (est.); Totanicopan, 30,000 (est.), Cobán, 27,000. During 1938 Guatemala continued quiet under the quasi-dictatorship of President Jorge Ubico. On April 9 a treaty was concluded with El Salvador defining their mutual boundary. Despite the chaotic condition of the world coffee market, coffee exports during the year were maintained with a slight increase in volume, although with some decline in price. In 1937 total imports were 16,742,907 quetzales, representing a 45 per cent increase, and exports 16,108,610 quetzales, a 7 per cent increase. The United States holds a commanding position in Guatemalan foreign trade. Trade



John Armstrong]
ANTIGUA, ANCIENT CAPITAL OF GUATEMALA

in 1938 expanded slightly. Guatemala has 850 miles of railway and 3,472 miles of highway, with 887 miles under construction. Steamship and air services provide external communication. Coffee (production: 102,961,491 lb. in 1936–37) is the chief product and export Bananas, the second export, increased 17·6 per cent in 1937. Coffee and bananas comprise 90 per cent of all exports, with chicle the only other commodity of consequence. There is some manufacturing for domestic consumption The monetary unit is the quetzal (value: approx. $1 U.S.). In 1936–37 government revenues were the highest since 1930 ($11,605,000); expenditures were $9,853,000. The 1937–38 budget called for $9,788,500. There are over 2,500 schools, with an enrolment in excess of 145,000. In 1937–38, 15 per cent of government expenditures went to education, making the sixth consecutive year of increase. Guatemala has conscription and an army of 7,000. (L. W. Be.)

GUIANA: *see* British Guiana; French Guiana; Surinam.

GUINEA: *see* French West Africa and the Sahara; Portuguese Guinea.

GUJARAT STATES are a group of small principalities in the N. of Bombay which, when they were recently brought into direct relation with the Governor-General, were placed under the superintendence of the Resident in Baroda (Col. E. J. D. Colvin). Area 7,541 sq. miles; pop. 1,272,168. Rajpipla is the best-known of the group, with about thirty smaller chieftainships.

GUSTAVUS (Gustav) **V** (1858–), of whom a biographical account will be found in the *Ency. Brit.*, vol. 11, p. 11, has been king of Sweden since 1907, and is the oldest reigning monarch, though he is exceeded in length of regnal years by the rulers of Holland (*see* Wilhelmina), Italy, and Norway. He ascended the throne in 1907, and on Dec. 8, 1932, Silver Jubilee celebrations were held throughout the country with an enthusiasm that was surpassed only by that with which his eightieth birthday was celebrated on June 16, 1938, when the Kings of Denmark and Norway and the president of Finland attended at Stockholm to convey the congratulations of their peoples.

On his seventieth birthday (1928) he devoted the national subscription of five million kronor that was presented to him to the endowment of cancer research; on his eightieth birthday he applied a subscription of a similar amount to combating rheumatic diseases.

King Gustaf, who suffered severely through the death of his consort, Queen Victoria, at Rome, on April 4, 1930, is still extremely active, and rarely misses his daily game of tennis, and on the day after his very tiring birthday a film was taken of him playing. His Majesty spends most of the winter on the Riviera, and on his return at the end of April, 1938, he visited Berlin, entertaining Field-Marshal Göring, Herr von Ribbentrop, and others at the legation. Throughout his reign he has shown himself a liberal ruler, agreeing to various amendments of the constitution, among others to universal and female suffrage, and to the removal of the ban prohibiting marriage between a prince and the daughter of a foreign commoner.

GWALIOR is the largest state in Central India; area 26,367 sq. miles; pop. 3,500,000. Under the late ruler, an enlightened policy of progress was pursued, and the beginnings of free institutions were made. In 1938 the present Maharaja (H.H. George Jiwaji Rao Scindia) made his first public appearance since his investiture in 1937, and took the occasion to promise enlarged powers to the legislature which had come into existence in the previous year.

(ME.)

GYNÆCOLOGY AND OBSTETRICS. The maternal mortality rate in England and Wales during the four years 1934 to 1937 has declined steadily from 4·41 per 1,000 total births in 1934 to 3·13 in 1937.[1] The 1937 rate is the lowest recorded since the present classification was adopted, that is, over a period of twenty-seven years. The mortality rates, both from puerperal sepsis and causes other than puerperal sepsis, have shared in this declension. The former has dropped sharply from 1·95 per 1,000 total births in 1934 to 0·94 in 1937, the latter from 2·47 in 1934 to 2·19 in 1937. From these figures there is reason to believe that the persistently high rate -for many years a cause of serious public concern -has at last responded to the administrative and other measures directed against it. It is significant that the sepsis death-rate has declined by about fifty per cent, and it has been suggested with some reason that this, in part at least, is explained by the well-established efficacy of the sulphonilamide drugs in the treatment of those types of puerperal sepsis which are due to the hæmolytic streptococcus.

During recent years much scattered work has dealt with the influence of nutrition on maternal mortality and morbidity. Whilst more investigation is urgently required before we can pronounce on some of the more important general questions underlying maternal nutrition, we already have information of value on specific matters. Thus, it is now recognized that much of the widespread anæmia occurring both during and after pregnancy is due to the swallowing up of the low iron reserves in women whose diet is defective in this mineral. Then, again, the polyneuritis of pregnancy, sporadic in all countries and endemic in some, is similarly related to B1 deficiency. The work of Preston Maxwell in China has, likewise, demonstrated the primary part played by deficiency of the Vitamin D and calcium-phosphorus intake in osteomalacia and adolescent rickets.

One of the most urgent problems awaiting solution is the influence of maternal nutrition on fœtal mortality and morbidity. Preston Maxwell has shown conclusively that children of osteomalacic women may be rickety at birth, and much interesting work is being carried on to determine how far the less extreme ranges of deficiency in maternal nutrition known to be prevalent in most western communities may undermine the health and stature of the oncoming generation. Thus, Finola, Trump, and Grimson have given evidence to show that the skull, rib, and limb bones of children can be modified by the addition of Vitamin D, calcium, and phosphorus to the mother's diet.[2]

The work of Evans has shown Vitamin E, the fertility vitamin, to be essential for the healthy development of the animal fœtus, and recent study on the successful treatment of women who tend to abort habitually suggests the importance of this vitamin also in the physiology of human pregnancy. The development of cretinism in rats born of mothers fed on a diet defective in Vitamin E raises some fascinating possibilities in human pathology (Barrie). Recent work (Rowland and Singer) suggests that this vitamin may exert its influence through the anterior pituitary gland.

Some recent investigations on fœtal physiology go far to upset the traditional view that the child does not and dare not breathe before birth. Bonar and others have claimed to show that the fœtus *in utero* carries out respiratory movements with the production of a tidal flow of amniotic fluid in the lungs.[3] Such a mechanism would easily account for the occasional occurrence of antenatal pneumonia.

The sex endocrinologist occupies a prominent place in current medical literature. Dodds, Lawson, and Noble[4] have described the biological effects of a new synthetic œstrogenic substance (diethylstilbœstrol), which in ovariectomized rats was found to be two and a half times as powerful as œstrone. Its special importance lies in the fact that it is more effective than previous œstrogenic substances when taken by mouth and that its discovery may lead within a short time to the placing on the market of a cheap, active, and convenient drug.

Sheehan has shown that massive necrosis of the anterior part of the pituitary gland is apt to be found in women dying from puerperal hæmorrhage, and has given reason for the view that Simmond's Disease (a chronic disease associated with marked physical and mental disturbance) is generally due to a similar lesion which, being of lesser extent, is consistent with survival.

One of the most fascinating developments in recent sexual physiology is found in the evidence that a special area at the base of the brain (hypothalamus) contiguous to the pituitary gland is concerned directly and intimately with the whole complex—physical, mental, and psychical—of the sexual process and its manifestations.

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(J. Y.)

H

HÁCHA, EMIL, LL.D (1872–), president of Czechoslovakia, was born at Trhové Sviny, Bohemia, the son of a tax administration official, and was educated at Budějovice (Budweiss) and the Charles University, Prague, where he studied law. He gained his doctorate in 1896, and from 1898 till Dec. 1916, when he became court counsellor at the administrative court of Vienna, was in the service of the provincial committee of the kingdom of Bohemia. After the revolution of 1918 he became (Nov. 23) senate's president of the Prague administrative court in the newly established republic of Czechoslovakia, becoming second president in March 1919 and first president of the supreme administrative court in 1925. On Nov 30, 1938, following the resignation of Dr. Beneš and the interim government of General Sirový (*qq v.*), Dr. Hácha was elected president by 272 votes out of 312 ; he received the resignation of General Sirový that afternoon, and on the following day appointed a new government under M. Beran

Dr. Hácha, who for long was a member of the Permanent Court of Arbitration at The Hague, has an international reputation as a lawyer. He is a fluent speaker of both English and German, and has published Czech translations of books by Kipling, Stevenson, and Jerome K. Jerome ; he has also taken a keen interest in the fine arts, and from 1906 to 1916 was secretary to the directors of the modern Gallery at Prague (of which he is still a director), and was largely responsible for the housing and cataloguing of the collections.

Dr. Hácha is a Roman Catholic ; he was left a widower, with one daughter, early in 1938.



Keystone

DR. HÁCHA AND GENERAL SIROVÝ

HAIG, SIR (THOMAS) WOLSELEY, British administrator and orientalist, was born on Aug. 7, 1865, and died in London on April 28, 1938. He was educated at Wellington College and Sandhurst, and saw service in Upper Burma from 1887 to 1889. In 1892 he was appointed to the Berar Commission, which administered the Assigned Dominions of the Nizam of Hyderabad, and in 1901 became First Assistant to the Resident at Hyderabad. In 1907 he was appointed Assistant Secretary to the Government of India, Foreign Department. From 1910 until his retirement in 1920 he was mainly in Persia, where he dealt with many a difficult situation with conspicuous tact and ability. After returning to England, he held posts as professor of Arabic, Persian, and Hindustani at Trinity College, Dublin, and as lecturer in Persian at the School of Oriental Studies, London University. He was appointed March Pursuivant of Arms in Scotland in 1923, and from 1927 to 1935 was Albany Herald. He was created a K.C.I.E. in 1922. His publications included many important translations of oriental historical works, and he edited the third and fourth volumes of the *Cambridge History of India.*

HAITI. West Indian republic occupying the western third of Hispaniola ; language, French ; president, Stenio Vincent. Area 10,204 sq. miles ; population (almost entirely Negro), 3,000,000 (1938 estimate). Chief cities : Port-au-Prince, the capital, 125,000 ; Cap Haitian, 14,000.

The nationalistic policies of Cuba and the Dominican Republic during 1937 compelled repatriation of Haitian immigrants. The extreme violence accompanying their forcible expulsion by the Dominican government in October and November 1937, in which an estimated 10,000 or more Haitians were killed, precipitated serious tension. The question was submitted to Pan-American arbitration under the " Gondra treaty " of 1923 (Jan. 19, 1938), and on Jan. 31, Haiti was awarded an indemnity of $750,000.

Education. There are over 400 primary and secondary schools, with a total enrolment in excess of 50,000 The university of Haiti, at Port-au-Prince, held its first international summer session in 1938

Finance. The monetary unit is the gourde, fixed by law at 20 cents United States The public debt on Sept 30, 1938, was 43,950,000 gourdes, a decline of 387,000 gourdes in 12 months. Fiscal control is in the hands of a financial adviser nominated by the President of the United States

Trade and Communication. There are 164 miles of railway and over 1,000 miles of motor highway. In 1937, imports were $9,215,132, an increase of 22 per cent. Exports totalled $8,970,890, a 6 per cent decrease. For the fiscal year ending Sept. 30, 1938, total foreign trade was $14,541,200, the lowest in 21 years. Imports were $7,594,800 and exports $6,946,400. The decline in exports was primarily one of value, rather than of volume. Owing to falling prices, amortization of Haiti's debt was partially suspended by agreement with the United States in January. (*See* also DOMINICAN REPUBLIC.) (L. W. BE.)

HALE, GEORGE ELLERY, American astronomer, was born in Chicago on June 29, 1868, and died at Pasadena,

California, on Feb. 22, 1938. An account of his life and work may be found in the *Ency. Brit.*, vol. 11, p. 87. It was on Dr. Hale's persuasion that, in 1928, the International Education Board provided funds for building a 200-inch telescope, and in 1935 the great disc of this instrument was taken from the electric incubator where it had been cooling for twelve months. Dr. Hale did not live to see the completion of this telescope, which, at the time of his death, was being expected at Mount Palomar, California. In 1932 the Royal Society awarded Dr. Hale the Copley Medal.

HALIFAX, EDWARD FREDERICK LINDLEY WOOD, K.G., 3RD VISCOUNT (1881–), British statesman, of whom, as the first baron Irwin, a biographical notice will be found in the *Ency. Brit.*, vol. 12, p. 696. After completing, in 1931, his term as Viceroy of India, he became for the second time President of the Board of Education (1932), and since 1935 has been leader of the House of Lords, holding office successively as Secretary of State for War, Lord Privy Seal, and (May 1937) Lord President of the Council, until on the resignation of Mr. Anthony Eden he became Foreign Secretary (Feb. 25, 1938). There was little criticism of the last appointment, except on the ground of the alleged undesirability of the chief of the Foreign Office being in the Lords.

Before becoming Foreign Secretary Viscount Halifax, in Nov. 1937, visited Germany and had long conversations with Herr Hitler, Baron von Neurath, and General Göring. Speaking in the House of Lords on March 16 shortly after the *Anschluss*, he said: "First, I would say that we must seek, in the face of the present situation, so to conduct our foreign policy that it may deserve and command the support in this country of a united people and in the Dominions of a united Empire. Secondly, while relaxing no exertion in pursuit of real peace wherever it may be found, it must be our purpose to reassert the claims of international law as opposed to the exercise of force in the settlement of international disputes. . . . Next, we must do everything to bring it about that means should be devised . . . to direct the minds of nations to the removal of injustices as much as to the maintenance of peace. And lastly, this country must for the fulfilment of these purposes show itself prepared not only by way of material and equipment but in the spirit, discipline, and determination of our people".

HANKEY, COL. SIR MAURICE PASCHAL ALERS, G.C.B. (1877–), British ex-civil servant, was educated at Rugby, held his first commission (1895) in the Royal Marine Artillery, and in 1902 was transferred by Admiral Sir John (Lord) Fisher to the naval intelligence department at the Admiralty; in Jan. 1908 he was appointed assistant secretary of the committee of imperial defence, and, in March 1912, promoted to secretary. On the outbreak of the World War he became secretary of the war council, and in 1916 head of the secretariat of the newly formed war cabinet; he was also secretary to the imperial war cabinet, and after the armistice acted as British secretary at the Paris Peace Conference.

When the war cabinet was dissolved in 1919 Sir Maurice, while still secretary of the committee of imperial defence, became secretary to the cabinet, and in 1923 added to these posts the office of Clerk of the Privy Council, having meanwhile been secretary to the Imperial Conference of 1921 and to the British delegation at the Washington Conference of 1922. In July 1938, he resigned his offices to join the board of directors of the Suez Canal as one of the government's representatives.

Sir Maurice is married and has three sons and one daughter. K.C.B. in 1916, he was advanced to G.C.B. in 1919, when he received the thanks of both Houses of Parliament and a grant of £25,000; he was created G.C.M.G. in 1929 and G.C.V.O. in 1934.

HARBOURS: *see* DOCKS AND HARBOURS.

HATAY, THE. On Nov. 29, 1937, there came into force the statute and basic law whereby the Sanjak of Alexandretta was endowed with a political, administrative, and judicial machinery compatible with the exercise of the French mandate.

In conformance with the decisions of the League of Nations, the Sanjak was constituted as a separate entity from Syria, and could form the subject of no international decision without the previous formal consent of the League of Nations. Turkish and Arabic became the official languages. The Sanjak was demilitarized, with a police force of 1,500, but France and Turkey gave a joint guarantee of its territorial integrity. It was to be the duty of a League of Nations delegate, of French nationality and possessing the right of veto, to ensure that the new regime was respected.

The new regime was very badly received by Syrian and Turkish public opinion, and was only poorly defended in France. The Turkish government broke off relations with the League of Nations Commission whose duty it was to arrange the elections, and the Commission then asked, on June 24, to be relieved of its mandate, the fulfilment of which was rendered particularly difficult by the attitude of the French authorities in the Sanjak in relation to non-Turks.

France and Turkey entered into direct negotiations, which resulted in the signature at Ankara on July 1 of a treaty of friendship and a military protocol. This agreement was to the advantage of the Turks, who at once proceeded, on July 5, to put an armed force of 1,500, equal to the French force, into the Sanjak.

The official electoral rolls on Aug. 3, 1938, showed 35,847 electors from the Turkish communities, 11,319 Alouites, 5,504 Armenians, 1,845 Arabs, and 2,098 Orthodox Greeks. In the elections on Aug. 21, the Turks obtained 22 seats out of forty.

The new Assembly met at Antioch on Sept. 2, 1938. M. Tayfour Seukmen was elected President of the new state (which was given the name of the Hatay), M. Abdul Gani Turkmen President of the Assembly, and Dr. Abdulraman Malek Prime Minister. All these ministers are Turks.

The Assembly adopted a flag, which is the same as the Turkish flag except that the star, instead of being represented *en bloc*, is shown only in white outline.

Since then the Turkification of the Hatay has been actively carried out. Christian and Syrian officials have been dismissed, the Turkish language has been taught and used at the expense of Arabic, the battalion of footguards and the two squadrons of horseguards have been reorganized, and demonstrations have taken place in favour of Ankara. In short, the Hatay must in future be looked upon as practically a Turkish province.

This situation has had profound repercussions in Syria, especially among the Christians of the High Jazirah and of Lebanon, who have been deeply disturbed by the attitude of France.

(C. A. J.)

Area and Population:

Area 1,930 sq. miles.
Population *c.* 228,000 (Turks, 85,000; Alouites, 62,000; Christians, 49,000; Sunnite Arabs, 22,500).
Chief Towns: Antioch, Alexandretta.
President. M. Tayfour Seukmen.

Language. Turkish (chief official).
Religions. Mohammedan and Christian.
Flag. A white crescent and a star (outlined in white) on a red background.

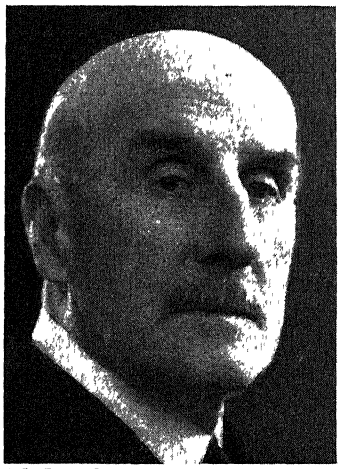
HAWAII. The U.S. Territory of Hawaii consists of a group of eight larger islands (Hawaii, Kahoolawe, Maui, Lanai, Molokai, Oahu, Kauai, Niihau) and numerous islets including Midway (*q.v.*) and Palmyra in the Pacific ocean. Their total area is 6,438 sq. miles. The capital is Honolulu, on the island of Oahu. It is a completely modern city with a population (1930 census) of 137,582. Oahu is the scene of the United States' strongest fortifications in the Pacific Hawaii's population, 368,336 in the 1930 census, is estimated at approximately 412,000 in 1938. The racial origin of this population, in addition to the native Hawaiians and Caucasians from the mainland, is Japanese, Chinese, Korean, Filipino, Portuguese, with 81 per cent native born; immigration into the Territory, except for citizens from the American mainland, has ceased.

The governor and Territorial secretary are appointed by the president. Otherwise the Territory is wholly self-governing. It elects to Congress every two years a delegate who has a voice in the House of Representatives but no vote. The governor in 1938 was Joseph B. Poindexter; and the delegate, Samuel W. King. The Territory collected in taxes and fees $12,722,141 in 1938 and expended $11,656,721. In addition, Federal taxes were paid into the U.S. Treasury of $14,286,656 20, exceeding the payment of seventeen States of the Union.

Agriculture. Hawaii's chief crops are sugar and pineapples. The value of the 1937 sugar shipments was $63,575,478. The pineapple industry, next in importance, reached in 1937 a maximum of 879,641,271 lb. with a value of $59,395,090. Other agricultural crops are coffee, macadamia nuts, papayas, and taro, a root used by the natives in making the native "poi" and also now being processed into flour.

The tourist industry has developed rapidly in the last two decades, there being a total of 53,938 tourist visitors in 1938.

HAWKE, MARTIN BLADEN HAWKE, SEVENTH BARON, English cricketer, was born in Lincolnshire on Aug 16, 1860, and died in Edinburgh on Oct. 10, 1938. He played cricket for Eton, and, in 1882, 1883, and 1885, for Cambridge against Oxford, being captain in 1885. He was a competent, though not an outstanding, batsman; but his great service to cricket was rendered by his brilliant captaincy of the Yorkshire County Cricket Club from 1883 until 1910. His cricketing tours included one in Australia, interrupted by his father's death, two each in the U.S.A. and Canada and in South Africa, and one each in India, New Zealand, and South America. Lord Hawke was president of the M.C.C. from 1914 to 1918, and was several times a member of the test match selection sub-committee. He succeeded his father in 1887, and is succeeded by his brother, Edward Julian Hawke.



P.P. Bureau]
LORD HAWKE

HAY FEVER: *see* EAR, NOSE, AND THROAT, DISEASES OF.

HEART AND HEART DISEASES. During 1938 there was a steady advance in the development of methods of study of the heart, with a notable announcement concerning the experimental production of serious disease of the coronary arteries (that supply the heart muscle with oxygen and nutriment). This significant discovery was unexpectedly made some years ago during a research on the effect of nerve imbalance due to excessive parasympathetic (vagus) stimulation on the gastro-intestinal tract of chickens and dogs; its importance was at once realized, and for years an intensive research has been carried on, the results of which are now being reported. Dr. George Hall, of the Banting Institute in Toronto, was able in every instance to produce extensive coronary disease with thrombosis in healthy young dogs by the repeated daily injection over periods of weeks to months of acetylcholine (the chemical substance liberated by parasympathetic or vagal nerve stimulation, antagonistic to sympathin and adrenalin produced by sympathetic nerve stimulation). Repeated vagal stimulation during many hours will cause temporary changes in the electrocardiogram which indicate a passing effect (as from coronary spasm) which, if it could be repeated long enough, might lead to the same changes produced by the acetylcholine. Some of the animals actually died of the heart disease, a condition which is not normally found in dogs even much older than those tested; only two of sixty old dogs studied as controls showed even a slight degree of coronary disease. It was of interest that the change was mostly in the media (muscle layer) of the dogs' coronary arteries, while it was in the intima (internal coat) in the case of rats, showing the selective effect according to species. It was also of special interest that the regular administration of atropine (which paralyses the vagus and so neutralizes the action of acetylcholine) or adrenalin (which combats the parasympathetic effect) wholly protected the animals from the deleterious effect of the acetylcholine. Although Dr. Hall has wisely refused to commit himself as to the mechanism of the process or as to its implications in human disease, this discovery naturally raises the question of nerve imbalance and nerve strain, as one possible factor, at least, in the production of this most important cause of heart disease in man, shifting interest somewhat from the theory of a primary fault in cholesterol fat metabolism.

Meanwhile, coronary disease of all grades is coming to light more and more frequently as it is being sought for, especially by electrocardiogram, so that now it outranks the two other common types of heart disease, hypertensive and rheumatic, while syphilis as a cause fortunately ranks but a poor fourth in most countries of the temperate zone. Slight degrees of coronary arteriosclerosis are, in fact, so common that the diagnoses of angina pectoris and coronary thrombosis (occlusion of a coronary artery by a blood clot) possess no longer the sinister significance ascribed to them even as recently as a decade or two ago. Not only may these conditions be of slight degree during their acute phases, but they frequently clear up entirely so far as any clinical evidence is concerned. Symptoms may disappear, the heart seem entirely normal on physical examination and by X-ray, and even the delicate test of electrocardiography may reveal nothing despite the existence of a small scar in the heart muscle (healed myocardial infarct), or of calcified coronary arteries years after an acute illness of cardiac nature. Thus, it has become very important to distinguish between the immediate and ultimate prognoses

in heart disease, particularly during episodes of coronary insufficiency (as indicated by angina pectoris) or of actual coronary occlusion (chiefly thrombosis). The designation "*permanent* total disability" is not justified during such an acute illness, for even a very sick man may recover in a few months to live many years of a healthy and useful existence. Survivals in proved cases are already on record of eighteen up to 25 years after the occurrence of coronary thrombosis. Much cardiac neurosis, unjustified invalidism, and abuse of disability insurance have resulted in many cases from the old views of coronary disease. Although it is true that prognosis in coronary disease remains as one of the most difficult problems in the practice of medicine, the recent important advance in our knowledge as stated above is a long step forward

The treatment of coronary disease has also advanced to the extent of our recognition of the remarkably ability of nature to restore an adequate coronary circulation, no matter what we do or what medicines we give, making one sceptical of every new "cure" that is heralded abroad. Proper periods of rest, regulation of life and habits, and cultivation of a sensible calm state of mind are as yet superior, except in rare cases, to all the radical treatment by strong medicines, physical therapy, nerve injection, and operations, which have been introduced in recent years to include such radical measures as: (1) total removal of the thyroid gland to reduce the work of the heart muscle, and (2) attaching chest muscle, omentum, or lung to the heart to bring it new blood supply.

Congenital anomalies of the heart, an uncommon type of heart disease (about two per cent of heart cases), have always been the most difficult to analyse accurately as to the structural defects present, partly because of the extraordinary variety of combinations of the many defects that is found, and partly because only recently has a widespread interest in the condition been established in clinics through the stimulating influence of Dr. Maude Abbott of Montreal. Now every year new clinical diagnostic criteria of various congenital anomalies are being presented.

An important advance in methods of study should also be noted; this should prove helpful both in physiological and anatomical research and also in the analysis of difficult clinical cases. It is the X-ray visualization of the individual heart chambers and great vessels by the injection of diodrast into an arm vein followed by the taking of X-ray films at intervals of a few seconds afterwards to trace the course of this substance through the heart.

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HEBREW LITERATURE. Modern or secular Hebrew Literature, which began its existence in Germany and Austria in the middle of the eighteenth century, has witnessed in the post-war period a very great development. The internal changes of Russia after the establishment of its Soviet regime made it impossible, with serious consequences for Hebrew literature, for Russian Jewry, to whom the "golden age" of pre-war Hebrew literature owes so much, to continue to play their leading role in this field. This great loss had to be made up by the rebuilding of Palestine, where, thanks to the revival of the Hebrew language, modern Hebrew literature is at present in a highly flourishing condition, although suffering under the strain of the events of the last two and a half years. There are also smaller centres of activity of modern Hebrew literature in the Jewish Diaspora, *i.e* outside Palestine, mainly in Poland and in the U.S A.

Hebrew literature comprises at present almost every branch of literary activity of whatsoever national and public interest. Its most characteristic expression it finds in poetry and belles-lettres. Both general human themes and those of peculiar Jewish content, drawn from Jewish life in the Diaspora and Palestine, are dealt with in the modern Hebrew novel, which on the whole tends to be realistic, and often psychological The historic novel, dealing especially with topics of the Jewish past, biblical and post-biblical, has also found its exponents in modern Hebrew literature. The drama has not been developed to the same extent as poetry and prose, although the building up of the modern Hebrew Theatre ("Habimah", "Ohel", etc.) has fostered the dramatic branch of modern Hebrew literature Literary criticism is also alive in modern Hebrew literature. Essays on speculative, national, and political problems have become a favourite form of expression. One of the best modern Hebrew essayists was Ahad Ha'am. Scholarly research into general and Jewish History, Philosophy, Religion, Philology, and various natural sciences has been greatly enriched in modern Hebrew literature in recent years. Many of the pivotal classical and modern works have been in recent years translated into Hebrew, particular interest being taken in translations from English literature (from Shakespeare, Dickens, and Scott, to G. B. Shaw and Wells). Many modern English and American famous best-sellers have found their way into modern Hebrew.

One of the most flourishing branches of modern Hebrew literature is its periodical Press—once much cultivated in pre-war Russia and at present concentrated in Palestine—the various organs of which cover almost every aspect of Jewish life and spiritual interest. The activity of modern Hebrew literature in recent years has on the whole demonstrated that Hebrew has become more and more a modern living language, and its revival is one of the greatest achievements of modern Jewry. (S. R.)

HELIUM. The only commercial sources of helium in the world are the natural gas fields of the south-western United States. The Cliffside helium reserve, covering 50,000 acres, which supplies the government-operated helium recovery plant at Amarillo, Tex., has an estimated reserve of one hundred thousand million cu. ft. of natural gas with 1·8 per cent helium. The recovery plant treated 293,429,000 cu. ft. of gas in 1937, producing 4,809,230 cu. ft. of helium, a slight increase over the 1936 output. The bulk of the output is supplied to the army and navy for aircraft use, but small amounts are sold for other uses. Mixed with oxygen, helium is a valuable substitute for air in the treatment of asthma, laryngitis, croup, and diphtheria, as the effort required for the breathing of this mixture is only about half that required for air. The difficulty known as "bends", suffered by divers and caisson workers when coming out of high pressure, may be obviated by the use of a helium-oxygen mixture instead of air, since helium is insoluble in the blood; but as yet the cost of helium is too high to make its use possible under ordinary working conditions. The use of helium for the inflation of toy balloons is being promoted, in order to avoid the liability of injury to children from the explosion of hydrogen-filled balloons.

After the destruction of the dirigible "Hindenburg" by an explosion in May 1937, an attempt was made by the German operating company to secure from the United

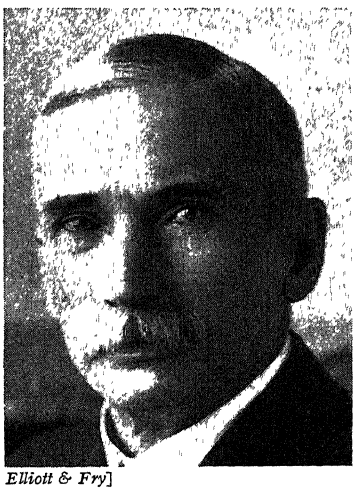
States a supply of helium for use in the ship being built to replace the "Hindenburg", but the government authorities having control of the export of helium refused to sanction the proposed sale.

HEJAZ: *see* ARABIA.

HEMP: *see* SISAL, HEMP, AND CORDAGE FIBRES

HENLEIN, KONRAD (1898–), Sudeten-German politician; educated at a commercial academy; became a bank-clerk, and later a gymnastics instructor. He was head of the German gymnastics movement (*Deutsche Turnbewegung*) in Czechoslovakia from 1923 until 1933, when he appeared as leader of the Sudeten-German Home Front, which became the second strongest party in the Czechoslovak chamber in 1935. On April 24, 1938, after a visit to Germany, he unavailingly demanded autonomy for the Sudeten-German areas; and in May, while negotiations were in progress, he visited first London, for informal discussions with British politicians, then Germany During August he submitted to Lord Runciman's mediatory efforts, visited Herr Hitler again on Sept. 1, and two weeks later, when a revolt broke out in the Sudetenland and martial law was ordered, presented the Czechoslovak government with an ultimatum for the withdrawal of that order. The Czechoslovak government having ignored his ultimatum, he issued a proclamation demanding the cession of the Sudeten-German territory to Germany; the government suspended his party for treasonable activities; Herr Henlein fled to Germany to escape arrest, and established a Sudeten-German "Free Corps" which engaged in skirmishes along the frontier as the German-Czech crisis approached its climax. On Oct. 1, after the four-power conference at Munich had ceded the Sudeten-German areas to Germany, Herr Henlein, his object attained, was appointed by the German government commissioner for the Sudeten-German territory, later regional party leader of Sudetenland, his first task being to merge the Sudeten-German party in the National-Socialist Party.

HERTZOG, JAMES BARRY MUNNIK (1866–), South African barrister and statesman, continued in his offices as prime minister and minister of external affairs (see *Ency. Brit Book of the Year*, 1938) of the Union of South Africa during 1938, and on July 2, following the success of the United Party in the general election (*see* SOUTH AFRICA, UNION OF), announced the formation of his fourth cabinet.



Elliott & Fry]
GENERAL HERTZOG

At the time of Mr. Eden's resignation in February General Hertzog strongly supported Mr. Chamberlain's foreign policy and approved the methods by which he sought to carry it out; and he was questioned many times during the year as to his attitude in the event of Great Britain's finding herself at war. His answers were cautious; but, during the September crisis, he explained that if the Union's obligations to other nations were called upon, they would be carried out at any cost, and that if Great Britain were subjected to an aggressive attack, South Africa would stand by her "if only because she was a member of the League of Nations".

In the National Anthem controversy, which for months occasioned some heat throughout the Union, General Hertzog—an Afrikander—refused to allow the adoption of the Afrikaans hymn "Die Stem van Suid Afrika" to the exclusion of "God Save the King", and was finally successful in securing that each should have equal recognition.

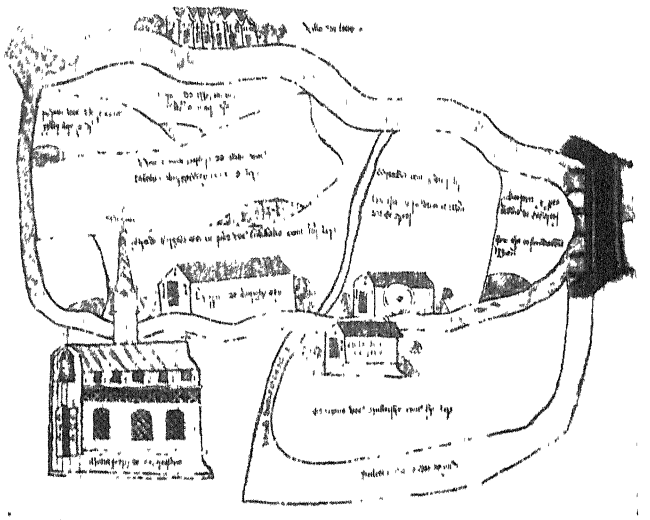
HIRE PURCHASE AND INSTALMENT BUYING. Instalment buying is practised in Great Britain chiefly by the system of Hire Purchase, under which the goods remain the property of the seller until the full payment has been made, the periodical instalments being formally regarded as hire rent during the intervening period. The great expansion of this system in recent years has been made possible because it has created a tangible security upon which banking houses could provide traders with the necessary finance. It has been almost entirely responsible for the widespread use of many modern mechanical appliances, notably motor-cars, radio, and household electrical appliances; and it has made possible the increased sale of furniture, bicycles, and other relatively durable articles. In addition, it is now widely used to finance the purchase of mechanical equipment by traders and small manufacturers.

The expansion of hire-purchase trading has been accompanied by an appreciable volume of abuses, resulting in what purchasers have regarded as unfair treatment. This development has fundamentally been due, partly to the inevitable complexity of the legal agreements, which purchasers have not comprehended; and partly to the fact that the trader with whom the initial negotiations are conducted is then frequently replaced by a finance company as a party to the agreement, an arrangement liable to give rise to misunderstandings on both sides. The Hire Purchase Act, 1938 (*see* PUBLIC STATUTES OF THE UNITED KINGDOM), was passed to deal with this situation; its main provisions regulate the procedure for making agreements, and give the purchaser certain minimum rights when only a proportion of instalments has been paid. There is no reason to suppose that its operation will prejudice the further development of hire purchase along sound lines.

Instalment buying of less durable consumable articles, notably clothing, is commonly effected by a variety of schemes which transfer the ownership of the goods to the purchaser at the beginning of the transaction. The most popular is the type under which the customer undertakes to pay, generally to a house-to-house collector, a fixed sum in weekly or monthly instalments, and in return is entitled to make purchases of a corresponding value from a particular trader. When the latter also conducts a cash trade, the interest and collection charges have to be allowed for specifically; but when the trader specializes in such credit schemes, his retail prices are usually adjusted to cover these charges. (D. BA.)

HISPANIOLA: *see* DOMINICAN REPUBLIC; HAITI.

HISTORICAL RESEARCH. In the midst of European unrest it was encouraging to see such a large and representative gathering at the eighth quinquennial meeting of the International Congress for Historical Sciences, held at Zürich from Aug. 28 to Sept. 4, 1938. Over 1,000 members from forty-four countries attended, the U.S.S.R. and Japan being the most conspicuous absentees, while the Austrians came as part of the German group. An official Indian delegation, headed by a famous scholar, Father Heras, S.J., attended for the first time, and three states were admitted as new members—China, Ireland (North and



The Times]
A MAP OF CHERTSEY ABBEY OF ABOUT 1430, THE EARLIEST EXHIBITED AT THE CENTENARY RECEPTION AT THE PUBLIC RECORD OFFICE, OCT. 26, 1938

South acting together as one cultural unit), and the Vatican City. Among the multifarious activities of the conference perhaps the most significant was the organizing of historical studies on a regional basis. The Baltic Commission, which reported on its work to the Congress, has proved a success, and three further regional commissions have been created: one for the study of the history of Central Europe, one for the study of the Near East, and one for the study of the Far East. The Near Eastern Commission, for instance, comprises the Balkan States, Turkey, Greece, Egypt, and Syria; the main theme of study will be the influence of Islam on the intellectual life of Eastern countries.

Much attention was paid at Zürich to methods of historical research, which become increasingly important as more and more material is made available. One new method, which has made striking progress during the past few years, is the use of the film camera. The possibilities of film photography in reproducing manuscripts, books, newspapers, and magazine articles was the main topic of discussion at the Anglo-American Historical Conference held in London during July. A long report on the subject by a special committee was adopted by the conference, and has since been circulated to a number of institutions representative of scientific and other non-historical studies. There is a likelihood that a national film institute on the lines recommended in the report may be established in the near future. The United States of America already has an American Documentation Institute, and the American Library Association began in 1938 the publication of a *Journal of Documentary Reproduction*, which gives information about the use of film photography by scholars all over the world. Belgium, France, Germany, and Holland are other countries making extensive use of this new method of research; and the Chief Archivist of South Africa made a special tour of America and Europe in the summer to examine its undoubted possibilities for his country.

Film photography was also discussed at the fourteenth conference of the International Federation of Documentation held at Oxford in September. The advantages of this cheap, rapid, and convenient method of reproducing both printed and unprinted documents were stressed, and at the end of the conference an exhibition of cameras and projectors suitable for the purpose was held in London. Another session of interest to historians was that devoted to the state of bibliography in various countries. Papers were read on such subjects as "The state of historical bibliography in the United States", "The bibliography of history in England since the Great War", and "Archives in their relation to other forms of documentation". The care and preservation of documents is a science which has developed recently. The new Society of American Archivists began in 1938 to publish a journal of *Archive Administration*, and has set up a committee similar to the British Council for the Preservation of Business Archives. On Oct. 26 a reception was held at the Public Record Office, London, to celebrate the centenary of its foundation, and the display of historical documents, seals, maps and plans, methods of binding, repairing and restoring, reminded scholars of the great services performed by the "P.R.O." in making its treasures so readily accessible.

The year 1938 has seen the foundation of several historical societies of international importance and the appearance of many new historical periodicals. In the British Isles the Hudson's Bay Record Society has produced a first volume of documents from its vast store and the Old Dublin Society has published the first number of the *Dublin Historical Record*. The Danish Society for Ancient and Medieval Studies has started *Classica et Mediaevalia*, a magazine devoted, like the *Journal of the Warburg Institute*, London, to the influence of classical culture on subsequent history. The National Centre for Renaissance Studies at Florence has begun a periodical entitled *Rinascita*, which will be especially concerned with Italian aspects, while *Istoricheskiye Zapiski* (Historical Memoirs), a new periodical published by the Institute of History, Moscow, will be concerned with Russian, rather than general, history. A particularly notable experiment is a magazine entitled *Nederlandsche Historiebladen*, which is published by a joint committee of Dutch and Flemish historians. It will contain matter of interest to all Dutch-speaking peoples, including those in South Africa. Outside Europe there has also been much activity. A considerable number of new local periodicals has appeared, not only in the United States of America, but in Latin America, which is producing a great deal of material on its complex history. In the Far East Japan announces the commencement of *Monumenta Nipponica*, a journal written in English, which will seek to present Eastern culture to the West, and will pay particular attention to the so-called "Christian century" (1550–1650), when contacts were fairly close. It may truly be said that in most countries men have never shown themselves more interested in the past than at the present troubled time. (A. T. M.)

HISTORY MUSEUMS. In 1938, Queen Mary presented several Nelson relics to the National Maritime Museum, Greenwich, and a death mask of Nelson to the Victory Museum, which was opened in Portsmouth by the Earl of Cork and Orrery in July.

The Imperial War Museum held an exhibition of actual war-time photographs taken for observation purposes, and the library received war books from French and German donors.

A collection illustrating the cultural history of Yorkshire, presented by Dr. Kirk of Pickering, was housed in the converted female prison at York. The Abbey Folk Park, New Barnet, acquired domestic stained-glass panels of the fifteenth and sixteenth centuries. M. le Comte de Suzannet gave to the Dickens House several pages of Dickens's manuscripts and a miniature painted in 1830 by Miss Janet Barrow. The Duke of Northumberland opened the Grace Darling Museum at Bamburgh, Northumberland, and trans-

ferred it to the Royal National Lifeboat Institution. Cecil Rhodes's birthplace at Bishop's Stortford, as nearly as possible as Rhodes knew it, was opened as a memorial museum. A society was formed to preserve Disraeli heirlooms at Hughenden Manor. Queen Mary presented several hundred miniature dolls and toys to Hull Municipal Museum. The Barking Museum received on loan a magnificent collection of arms and armour of the fifteenth to seventeenth centuries. The treasures of Covent Garden Opera House are being arranged in a museum. The Ashmolean Museum, Oxford, received from Messrs. Alfred and Arthur Hill stringed instruments, including a Stradivarius violin. Mr. Archibald G B Russell, Lancaster Herald of Arms, presented a royal warrant of Charles II to Sir John Soane's Museum.

Europe. At the Cluny Museum, Paris, Roman walls have been uncovered and new lighting has been installed in the Roman baths In Germany, the town museum at Offenbach is building an extension to hold relics of Alois Senefelder, inventor of lithography or stone-printing ; and at Friedrichshafen a museum was opened to commemorate Count Friedrich Zeppelin, the centenary of whose birth occurred on July 8

United States. A branch of the Metropolitan Museum of Art, called the " Cloisters ", was presented to the nation by Mr. John D. Rockefeller, Jun , and opened in May. The museum, situated on Manhattan Island, consists mainly of reconstructions of monasteries and other buildings, dating from the twelfth and thirteenth centuries. The Smithsonian Museum acquired the aeroplane in which Douglas Corrigan flew the Atlantic. About five miles north of Newport News, Virginia, Mr. Arthur M. Huntingdon, of New York, laid out a 1,000-acre park containing the Mariners' Museum. (V. R.)

HITLER, ADOLF (1889–), German *Fuhrer* (Leader) and Chancellor (see *Ency. Brit. Book of the Year*, 1938, p. 309), continued with great success during 1938 his policy of national expansion, though this was directed, not to the re-acquisition of colonies, but to the absorption of expatriated Germans, those on Italian soil excepted, and by the expatriation, in so far as this was possible, of non-Aryan nationals. The *Anschluss* with Austria, the inclusion within the Reich of the Sudeten Germans, the increasing Nazification of Memel and the Free State of Danzig, belong to the history of the countries concerned.

Early in the year Herr Hitler had to face serious discontent among the officers of the army, and on Feb. 4 retired F.-M. von Blomberg, named himself Supreme Commander of the Armed Forces, and created a secret cabinet council headed by Baron von Neurath, Herr von Ribbentrop, and F.-M. Göring, to advise him on foreign affairs. A speech that he delivered to the Reichstag and broadcast from the Kroll Opera House, Berlin, on Feb. 20, dealt with the internal and external positions and the need for colonies, and particularly attacked the foreign press, and another from the same place on March 18 celebrated the *Anschluss* ; in Austria he made important speeches at Linz (March 13) and Vienna (March 15) ; and his spectacular and highly successful visit to Signor Mussolini in Rome occupied from May 2 to 9.

After the Munich Agreement and the dismemberment of Czechoslovakia, Herr Hitler delivered two further speeches of importance ; the first at Saarbrücken on Oct. 9, memorable, from the British point of view, for its attack on Mr. Eden, Mr. Winston Churchill, and Mr. Duff Cooper, and the second at Weimar on Nov. 11, when he reiterated these attacks and drew a comparison between the authoritarian States and the democracies, to the great disadvantage of the latter.

Early in the year Herr Hitler had made some effort to stem the wave of anti-Semitism that threatened the country, but its effect was slight, and was entirely obliterated after the murder of the German diplomatist, vom Rath, in Paris by a crazed young Polish Jew in November.

HLINKA, ANDREJ, Slovak churchman and politician, was born in 1864, and died on Aug. 16, 1938, in his parish of Ružomberok, in Western Slovakia. He was ordained a priest of the Roman Catholic Church in 1889. Father Hlinka began his political championship of the Slovaks when his countrymen were still subject to Austro-Hungary ; and after the creation of Czechoslovakia he became leader of the Slovak Clerical Party in the chamber of deputies, his goal being Slovak autonomy. After some years of collaboration with the Czech Clerical Party, Father Hlinka's party went into opposition in 1929. The cause of Slovak autonomy has owed its lack of success partly to the fact that the strongest appeal for national unity has come from Dr. Hodža (*q.v.*), the prime minister, who is himself a Slovak.

HOCKEY. The 1937–38 season in Great Britain was marked by two alterations in the rules : the first forbids the hooking of sticks, and the second abolishes any intentional use of the foot for stopping the ball.

In the men's international matches, England beat Wales (5–0), Scotland (7–0), and Belgium (7–1), and lost to Ireland (0–3). Ireland beat Wales (5–0) and Scotland (3–1), and Scotland beat Wales (4–1), Wales again losing all her matches. The Oxford *v.* Cambridge match was drawn at one-all. In the inter-Services matches the Army defeated the Royal Navy (3–1) and the R.A.F. (6–1), and the latter defeated the Navy (2–1).

The All-England Women's Hockey Association suffered a serious loss when Miss Baumann, hon. sec. for seventeen years, resigned. She saw the membership rise from a few hundred to over 2,000 ; her place is taken by Miss Helen G. Armfield, president of the Southern C.W.H.A. England again defeated Scotland, Ireland, and Wales, and in her first match against Holland, on English soil, won by 8–0. The team sent by the Association to New Zealand had a most successful tour, and were unbeaten , on their return



Sport & General]

OXFORD GET INTO THE CIRCLE TO SCORE IN THE HOCKEY MATCH *v.* CAMBRIDGE, DRAWN ONE-ALL AT BECKENHAM

they played (unofficially) in Australia, winning three matches out of four, and at Colombo, winning by 8–0. The women's territorial matches resulted in four wins for the North, three for the West, two for the Midlands, and one for the East, while the South were everywhere defeated.

HODŽA, MILAN (1878), Czechoslovak politician, was born in Sucany, and graduated as a doctor of philosophy at Vienna university. In 1905 he was elected the only Slovak deputy in the Hungarian parliament. In 1918 he was appointed Czechoslovak minister to Hungary; in 1919 minister for the co ordination of legislative and administrative affairs throughout Czechoslovakia. Appointed professor of Slavonic history at Bratislava university in 1921, he held office in various governments as minister of education and minister of agriculture. He succeeded M. Malypetr as prime minister in 1935, and in that capacity attended the coronation of King George VI in 1937. Confronted with the Sudeten-German problem, in March 1938 he announced a new minority statute, which the Sudeten-German party rejected. In September, when Herr Henlein (*q.v.*) demanded the cession of the Sudeten-German areas to Germany, Dr. Hodža suspended the Sudeten-German party and issued orders for the arrest of Herr Henlein, who fled to Germany. On Sept. 18, as the German-Czech tension increased, Dr. Hodža made it clear, in a broadcast speech, that Czechoslovakia would not consent to the cession of the Sudeten-German areas, and would fight if Germany attacked. Three days later he was forced, under pressure from France and England, to accept the German demands for the cession of the Sudeten-German areas. The following day he resigned office, while retaining his seat in parliament.

HOLIDAY CAMPS: *see* CAMPING, CANOEING, AND CARAVANNING.

HONDURAS, a Central American republic; language, Spanish; capital, Tegucigalpa (pop. 50,000); president, General Dr. Tiburcio Carias Andino. The area is 46,332 sq. miles.

The population was estimated at 986,000 in 1937. Despite a continued difficult economic situation, the country was quiet politically in 1938, except for minor disorders in April. No progress was made by the international commission mediating the Nicaragua–Honduras boundary dispute during the year, and new friction arose in December when Nicaragua accused Honduras of importing arms in violation of the mediation agreement. Construction of a 985-ft. bridge at Choluteca promised early completion of the 85 miles section of the Inter-American Highway through Honduras. Foreign trade in 1936–37 showed a slight increase over 1935–36. Imports in 1937 totalled $10,387,271; exports (chiefly bananas, with some gold) aggregated $9,452,434. Most of the foreign trade is with the United States. The monetary unit is the lempira (value $.50 U.S.). The 1938 budget called for 11,451,263 lempiras, with 1,171,148 lempiras allotted to education. In 1936 there were 789 schools and 36,318 pupils. (L. W. BE.)

HONG KONG. In Oct. 1938 the landing of Japanese forces at Bias Bay, near Kowloon, and subsequent operations in South China, caused some apprehension in Hong Kong, and Japan was warned of the effect that any threat to the colony must have on relations with Great Britain. Extra police and troops were dispatched to the Kowloon border, and the government was empowered to requisition all food stores in the colony and to fix maximum prices, some shortage being caused by the cutting of communications after the fall of Canton. The budget introduced in October included provision on a large scale for air-raid precautions. The Admiralty approached the government of the colony with a view to repurchasing for naval purposes the site of the former naval arsenal, which had been sold for two million dollars after the completion of the new arsenal. The Mui-Tsai controversy was practically ended by a government ordinance, issued in June, requiring every person who has custody of an adopted girl to register her within three months with the Secretary for Chinese Affairs, who is her official guardian. Effect was thus given to the recommendations of the minority report of the Mui-Tsai Commission, 1937. A smallpox epidemic in the early part of the year led to about 2,000 deaths.

Area and Population:
Area, including Kowloon, etc., 391 sq. miles (Hong Kong Is. 32 sq. miles).
Population (est. Dec. 31, 1937) 1,066,982 (British and foreign, 22,582).

Governor. Sir G. A. Stafford Northcote, K.C.M.G.

Production, Secondary (Dec. 31, 1936):
Factories and workshops, 642; employees, 45,560.

Overseas Trade, Merchandise, 1937:
Imports $617,100,000 (£38,100,000)
Exports $467,300,000 (£28,800,000)
Note: Exports are almost entirely of imported merchandise.

Communications 1938:
Roads, motor . 377 miles (216 miles on mainland)
Railways: British section Kowloon–Canton Rly., 21¾ miles.

Finance and Banking:
Revenue: (1937) $31,240,000; (1938) $30,254,920.
Expenditure: (1937) $32,102,000; (1938) $33,368,552.
Public Debt (Dec. 31, 1937) . . $17,158,000
Notes in circulation: government, $3,625,000; banks, $230,037,967.
Exchange Rate (average 1937): $1 Hong Kong = 1*s.* 2 13/16*d.*

Education 1937:
Primary schools: government, 12; scholars, 1,969.
Secondary schools: total, 26; scholars, 11,032.
University of Hong Kong: 441 students.

HOPKINS, HARRY L. (1890–), U.S. secretary of commerce, was born in Sioux City, Iowa. After his graduation from Grinnell college he went to New York City to engage in social welfare work. He later became a fast friend of Franklin Delano Roosevelt, then Governor of New York, who in 1931 appointed him executive director of the New York State Temporary Emergency Relief Administration. Roosevelt named him Federal Administrator of Emergency Relief in 1933, and Administrator of the Works Progress Administration in 1935. In the latter position he supervised the spending of milliards of relief dollars and was one of the President's small circle of intimate advisers. Roosevelt appointed him to the cabinet on Dec. 23, to succeed Daniel C. Roper, who had resigned. The following day, Hopkins was sworn in as secretary of commerce and began work on a co-operative plan with private industry to re-employ workers.

HOPS. Production of hops in the five principal hop-growing countries of Europe in 1938 was estimated at 62 million lb., slightly less than the 1937 crop in these same countries. Production in the three hop-growing States (Oregon, Washington, and California) of the United States was estimated by the Dept. of Agriculture as 35,261,000 lb., of which only 32,121,000 lb. were harvested. Production in these three States in 1937 was 43,913,000 lb. Of this 4,365,000 lb. were left on the vines because of market conditions and labour shortage. In Europe the Polish German, and British hop crops were substantially larger

than in 1937, but in Yugoslavia and Czechoslovakia the production was much smaller. A large part of the Czech hop-growing area was lost to that country with the cession of the Sudetenland to Germany. In England and Wales the 1938 hop acreage was 18,490 acres, an increase of 390 acres over the 1937 acreage. In Poland buyers and exporters formed a co-operative society to advertise and promote the sale of Polish hops in foreign countries.

HORE-BELISHA, RT. HON. LESLIE, M.P. (1895–), British statesman, secretary of state for war, is the son of the late Mr. J I. Belisha, a London stockbroker, and his wife, Elizabeth Miriam (d. 1936), who, in 1912, became the wife of (Sir) Adair Hore (a leading civil servant, knighted 1925), her son adding her new married name to his own.

Mr. Hore-Belisha was educated at Clifton College, on the Continent, and (after war service, when he reached the rank of major) at St. John's College, Oxford, where, in 1919, he was president of the Union After some journalistic experience, in 1922 he was defeated when he stood as a Liberal for the Devonport division of Plymouth, but in 1923 (in which year he was called to the bar) won the seat, and has held it ever since, since 1931 as a Liberal-Nationalist. Holding office first as parliamentary secretary to the Board of Trade (1931) and then financial secretary to the Treasury (1932), he was minister of transport from 1934 to 1937, during which years he did much good work for the roads, introducing, among other reforms, the "Belisha beacon"; he was made a privy councillor in 1935.

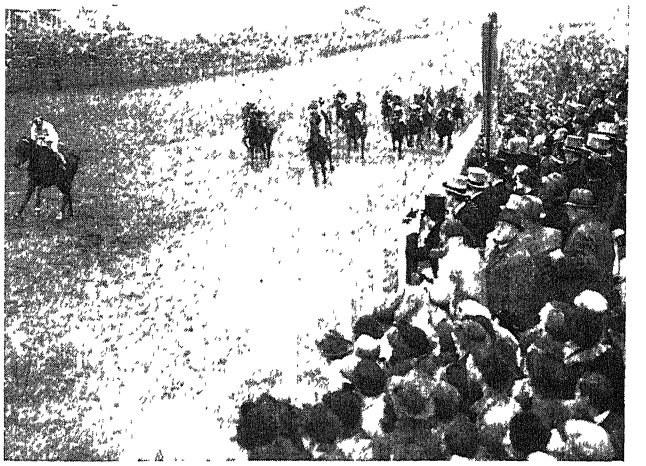
On the reconstruction of the cabinet on Mr. Baldwin's resignation in May 1937, Mr. Hore-Belisha became secretary of state for war, and as such has been responsible for many reforms in the Army and Territorials (*see* ARMY, BRITISH; TERRITORIAL ARMY) which, in turn, have greatly helped recruiting; in spite of this, however, at the end of the year he was the subject of attack, both from within and from outside his own department and his own party, on grounds of alleged over-optimism, dilatory inactivity, and the employment of too drastic measures, charges that he met in a speech to his constituents on Jan. 6, 1939.

Mr. Hore-Belisha is unmarried; he is an Elder of the Congregation of Spanish and Portuguese Jews, and is its representative on the Board of Deputies.

HORMONES: *see* ENDOCRINOLOGY, PHYSIOLOGY.

HORRIDGE, SIR THOMAS (GARDNER), British judge, was born at Bolton on Oct. 12, 1857, and died at Hove on July 25, 1938. He practised first as a solicitor, but was called to the bar at the Middle Temple in 1884, and took silk in 1901. He was Liberal member of parliament for Manchester East from 1906 until 1910, when he was appointed judge of the King's Bench Division. In 1913 he succeeded Mr. Justice Phillimore as judge in bankruptcy. Sir Thomas retired from the Bench in 1937, and was sworn a member of the Privy Council. He was knighted in 1910.

HORSE-RACING. Foreign-bred horses gained a number of notable successes in Great Britain during 1938, capturing three of the principal races of the year—the Derby, the Ascot Gold Cup, and the Grand National—in addition to several important handicaps. France gained most of the spoils that went abroad, but the United States also took rather more than her fair share. Nevertheless there was still plenty of stake money left for English owners and breeders, and the increasing popularity of horse-racing was well demonstrated by larger attendances on the racecourse and by the increased turnover of the Totalizator.



The Times]

"BOIS ROUSSEL" WINNING THE DERBY, JUNE 1, 1938

The flat-racing season provided a number of surprising results so far as the Classic races were concerned. Only one of the five principal events of the year was won by a horse of whom the majority of people had ever heard. This was Mr. James V. Rank's colt, *Scottish Union*, by *Cameronian* out of *Trustful*, who, after running second in the Two Thousand Guineas and in the Derby, gained a narrow victory in the St. Leger. The Two Thousand Guineas winner, Mr. H. E. Morriss's *Pasch*, by *Blandford* out of *Pasca*, did not run as a two-year-old, his only previous appearance on the racecourse having been made ten days earlier at Kempton Park. Nevertheless, *Pasch* started a short-priced favourite for the Derby, only to be beaten into third place by his stable-companion, *Bois Roussel*, and *Scottish Union*. *Bois Roussel*, a French colt by *Vatout* out of *Plucky Liège*, had never run in England before gaining his success in the Epsom Classic race, Mr. Peter Beatty having purchased him in France only six weeks previously for £8,000.

In the meantime the One Thousand Guineas at Newmarket had been won by Sir Hugo Cunliffe-Owen's *Rockfel*, by *Felstead* out of *Rockliffe*, and this good filly proceeded to win the Oaks very easily in faster time than *Bois Roussel* had won the Derby. There was a decided touch of romance about the Classic triumphs of *Rockfel*, as she first ran as a two-year-old in a selling race at Sandown Park. It is not often that an ex-plater develops into a Classic winner, but *Rockfel* did more than that, as she proved herself later in the season to be the best three-year-old in training, with the possible exception of *Bois Roussel*. During the year *Rockfel* won more in stakes than any other horse in England, in spite of the fact that *Pasch*, in addition to winning the Two Thousand Guineas, was successful in the Eclipse Stakes at Sandown Park, one of the richest prizes to be won during the year.

Although credit goes to France for producing the Derby winner, it should be pointed out that *Bois Roussel*, apart from being out of an English mare, traces back to *St. Simon*. There is little need, therefore, for pessimism among English breeders of bloodstock. On the other hand, French horses were successful in such important handicaps as the Cambridgeshire Stakes and the Cesarewitch Stakes, results which were popularly attributed to the fact that Mr.

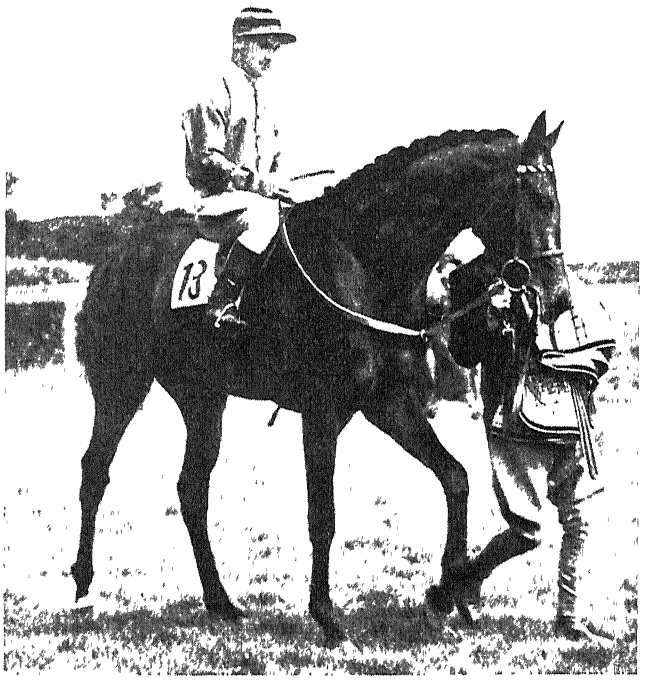
Arthur Fawcett, the official handicapper to the Jockey Club, had underestimated the ability of the invaders. There was certainly some justification in this viewpoint so far as the Cambridgeshire was concerned, because *Khasnadar*, who was second to *Hellenique*, is also a French horse. The third horse, *Domaha*, is trained in England, but was bred in France, being by *Vatout*, the sire of *Bois Roussel*, out of *Proserpine II*. The winner of the Cesarewitch was *Contrevent*, a three-year-old colt by *Dern* out of *Persian Princess*, and so entirely French bred, who beat *Dubonnet* and *Fet* rather easily. Here again it certainly seemed that *Contrevent* had been given too little weight.

Another French bred colt, *Foxglove II*, won such valuable races as the Ascot Gold Vase, the Ebor Handicap at York, and the Jockey Club Cup at Newmarket. *Foxglove II* is a three-year-old by *Foxhunter*, who stands at Mr. Edward Esmond's stud at Haras de Mortefontaine, near Chantilly, in France. He was a second fortunate purchase by Mr. Peter Beatty, who bought the colt for £4,000 the day before he won at Ascot. On his sire's side *Foxglove II* goes back to *Son-in-Law*, nearly all of whose descendants have proved to be good stayers. The five-year-old *Epigram*, owned by Mr. J. V. Rank, is by *Son-in-Law*, and his four victories included such long-distance events as the Queen Alexandra Stakes at Ascot, the Goodwood Cup, and the Doncaster Cup. *Son-in-Law* is now 27 years of age, and his progeny have won in stakes the enormous sum of nearly £380,000.

In addition to animals bred in France, several horses from the United States took their toll of the stakes. Among them was *Flares*, winner of the Ascot Gold Cup. *Flares*, a five-year-old by *Gallant Fox* out of *Flambino*, is owned by Mr. William Woodward, president of the New York Jockey Club. Mr. Woodward is also owner of the best two-year-old of the year, *Foxbrough II*, by *Sir Galahad III* out of *Marguerite*, also bred in the United States. *Foxbrough II* ran only twice, winning easily on both occasions. His victory in the Middle Park Stakes at Newmarket in October stamped him as a high-class colt.

Lord Derby, who headed the lists of winning owners and winning breeders for the year, raced some attractive two-year-olds in *Easy Going*, a filly by *Felstead* out of *Complacent*, *Heliopolis*, a colt by *Hyperion* out of *Drift*, and *Cockpit*, a colt by *Caerleon* out of *Merripit*. Of them, *Heliopolis* appeared most likely to train on into a future Classic-event winner. His sire, *Hyperion*, won the Derby and the St. Leger for Lord Derby in 1933. The Aga Khan did not have as good a year as many gone by, but in *Dhoti*, by *Dastur* out of *Tricky Aunt*, he produced a two-year-old that retired unbeaten after winning the Chesham Stakes at Ascot. Most successful of the trainers was Captain C. Boyd-Rochfort, who headed the winning list for the second time running with £51,350, having won 44 races with 29 horses. Next came Mr. F. Darling with £45,736, thanks chiefly to *Pasch* and *Bois Roussel*, and he was followed by Mr. Frank Butters, Mr. Jack Jarvis, and Mr. J. Lawson. Of the jockeys, Gordon Richards once more became champion by riding 206 winners, W. Nevett with 122 and E. Smith with 114 being his nearest attendants. Smith has never ridden so many winners in any previous season, and as he is the youngest of the three by a number of years, it is reasonable to assume that even higher honours will come his way in due course.

The season under National Hunt Rules was notable for the great finish between *Battleship* and *Royal Danieli* in the Grand National Steeplechase at Liverpool. *Battleship*,



Sport & General]

"PASCH" (GORDON RICHARDS UP), WINNER OF THE TWO THOUSAND GUINEAS AND THE ECLIPSE STAKES, 1938

who belongs to Mrs. M. Scott, an American owner, and was bred in the United States, won by a head after the best race there has been for many years. He is one of the smallest horses ever to have won the Grand National and also one of the few entire horses to have done so. *Battleship*, who is now at stud in his native land, was trained for the race by R. Hobbs, whose son, eighteen-year-old Bruce Hobbs, rode a great race. *Royal Danieli* is an Irish steeplechaser, as is the third horse in the Grand National, *Workman*, and so, once again, English-bred horses had to take a back seat. The Cheltenham Gold Cup, which had almost come to be regarded as the prerogative of Miss Dorothy Paget's grand old horse, *Golden Miller*, was won this time by *Morse Code*, trained for Captain Bridges by Ivor Anthony. Of the other steeplechasers, mention must be made of Sir Francis Towle's *Airgead Sios*, one of the most brilliant jumpers in training, who won the Becher Steeplechase over two and a half miles of the Grand National course, among other races. G. Wilson again won the jockeys' championship, H. Nicholson doing best of the others.

Three English colts ran in the Irish Derby at the Curragh, but they were all beaten by *Rosewell*, a three-year-old by *Orwell*, bred in Ireland. *Rosewell* is trained by Colonel A. J. Blake, who also won the Irish St. Leger with *Ochiltree*. Both the One Thousand Guineas and the Oaks went to English fillies, Major McCalmont's *Lapel* taking the former event and *Conversation Piece*, belonging to Lady Furness, winning the Oaks. (A. K. B.)

United States. The gross amount of money distributed in stakes and purses in 1938 was $14,946,609, while all previous records for the number of races run and horses competing were excelled. The number of races was 16,243, and the different horses that started in them 12,183.

The leading owner of 1938, as far as stakes won goes, was Colonel Maxwell Howard, of Ohio, who took fifteen races of a net value of $226,495. His premiership was due to the feat of his three-year-old colt *Stagehand*, which, at the Santa Anita park, Cal., February–March, meeting won first

the $50,000-added Santa Anita Derby for three-year-olds, and then the $100,000-added Santa Anita Handicap for horses of all ages.

The chief interest of the season centred in the five-year-old *Seabiscuit* and the four-year-old *War Admiral*, conceded to be the best pair in training Their rivalry finally culminated in a match race for $15,000, run at the Pimlico course, Baltimore, Md., on Nov 4, and won by *Seabiscuit* before a 40,000 crowd, though *War Admiral* had gone to the post a heavy favourite. *Seabiscuit's* owner is Mr Charles S. Howard, of California, and at the close of the season the horse had netted him $340,480 in winnings

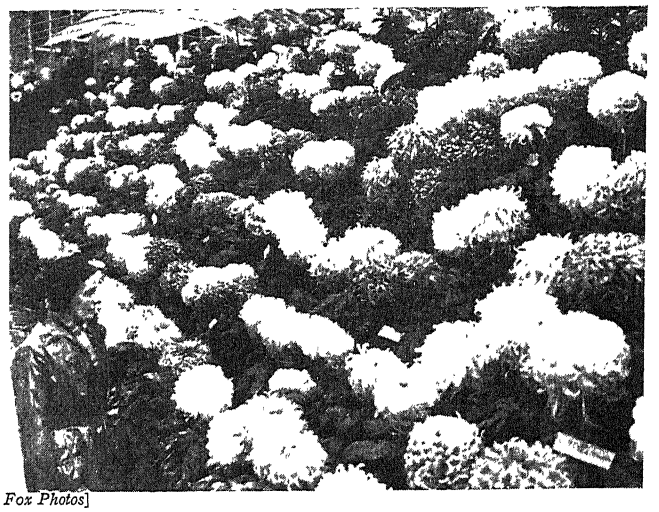
The trotting season was also the most prosperous for a number of years, and many records were broken

HORTHY DE NAGYBÁNYA, MIKLÓS (1868–), Hungarian admiral and regent; A.D.C to the Emperor Francis Joseph in 1914; vice-admiral in command of the fleet in 1918, elected regent in 1920. A detailed account of his career may be found in the *Ency. Brit.*, vol. 11, p. 773. In 1935, a regency reform bill gave him the unlimited right of sanctioning or rejecting bills which have been passed by parliament. His activities in recent years marked the closer understanding between Hungary, desirous of regaining her lost territories, and other nations with revisionist aims. Thus in 1936, after a visit to Herr Hitler in Berchtesgaden, Admiral Horthy, accompanied by Mme Horthy, paid a visit to the king and queen of Italy (a visit that was returned in 1937), went to Poland early in 1938, and in August paid a state visit to Germany. In September, a few days before the German-Czech crisis reached its climax, Admiral Horthy, at Field-Marshal Goring's invitation, secretly met prominent Polish personages at a hunting-party in East Prussia. In November, after Czechoslovakia's forced territorial concessions to Germany and Poland, and finally to Hungary, Admiral Horthy, mounted on a white horse, led the Hungarian troops into the second zone of the newly-acquired lands, assumed the grand mastership of the military order of Maria Theresa, and was solemnly received at Kassa, where the culminating ceremony of occupation was held.

HORTICULTURE. In 1938 the organization of horticulture on an international basis was improved by the establishment of a horticultural section at the International Institute of Agriculture in Rome. Dr. Ruys, of the Netherlands, has been appointed as chief of the section, and an advisory committee has been selected to assist. The section commenced work towards the end of 1938. One of its chief functions will be to carry into effect the resolutions of the International Horticultural Congress.

International Horticultural Congress. In August of 1938 the twelfth International Horticultural Congress was held in Berlin, when over 2,000 people became members—about half of whom were Germans. Large delegations came from Holland, Italy, Sweden, Switzerland, England, and France. A large number of papers and reports was presented to the congress and numerous discussions took place. The German department has agreed to present a full report to all members and to make an issue for sale to others. It was decided that the thirteenth International Horticultural Congress will be held in Norway in 1942.

The Ghent Quinquennial Horticultural Exhibition. Over a very long period there have been held in Ghent, at intervals of five years, horticultural shows that have gained international importance. The show held in April 1938 was probably the biggest and most important for *Azaleas indica* plants in existence. Other important plants were hydrangeas, orchids, and stove plants generally. Belgian nurserymen are very skilled in the culture of these stove plants and azaleas.



Fox Photos]

CHRYSANTHEMUMS AT THE AUTUMN SHOW AT HESKETH PARK, SOUTHPORT, NOV. 5, 1938

Bulbs. The Netherlands has ever been an important producer and exporter of bulbs, and changes concerning Dutch bulbs have far-reaching effects. Since 1933 the exports from Holland of tulips, daffodils, and hyacinths has been made at controlled prices, but in 1938 the control was removed.

The statistics published in 1938 alone show that the bulb area in England has been increased to over 7,000 acres—mostly daffodils, tulips, and hyacinths. So great, however, is the demand for bulbs that imports have also vastly increased. A large quantity, perhaps half, are used by the commercial flower growers for the forcing of early flowers.

Research work done mainly at the Bulb Research Station in Holland has shown that by storing bulbs under controlled conditions, it is possible either to accelerate or retard the development of the flower bud. Daffodil and tulip flowers are now produced in December from these "prepared" bulbs.

Horticultural Education. Presumably the increased interest in private and commercial horticulture has been responsible for the establishment in several counties of special centres for the teaching of the theory and practice of horticulture. In England, degrees are awarded in horticulture by the Universities of London and Reading, and courses may be taken at the South-Eastern Agricultural College, Wye, and the Horticultural College, Swanley (for women), and at the University of Reading. Courses in the practice of horticulture are given at each of the Agricultural Institutes, at the Royal Botanic Gardens of Kew and Edinburgh, and at the Royal Horticultural Society's Gardens, Wisley, Surrey: many students from Continental countries come to these courses of study. Post-graduate students from Empire universities come to work at the English horticultural research stations.

Recently there has been established in England the Henry Ford Institute for Agricultural Machinery, where courses are given on machinery used in agriculture and horticulture, and in this mechanized age these courses are much welcomed. Belgium has enlarged and improved the horticultural training centre at Vilvoord, and its reputation now stands high. The horticultural schools of the Netherlands are numerous and very practical, and are largely

responsible for making every Dutchman a gardener. In Germany the most recent development is a school (and testing centre) for tools and machinery normally used in horticulture. In addition, the teaching of the nutritional side of fruit and vegetables has been stressed.

Efforts are being made to secure an interchange of student gardeners on an international basis, but the regulations in force in some countries make for difficulty. Student gardeners are, however, exchanged between England, France, Belgium, and Switzerland. (H. V. T.)

In the United States the nursery business was at a low ebb until September, when a hurricane of unprecedented proportions ravaged New England and Long Island, destroying many thousands of ornamental trees and shrubs and doing an immense amount of damage to gardens and lawns on large estates. For a time, estate and home owners were stunned, but the process of rehabilitation was soon started. Firms devoting themselves to tree surgery were overwhelmed with orders for repair work. Replanting was then begun on a large scale, and nurserymen found themselves swamped with orders. As a result, they disposed of surplus stock which they had never expected to move. A heavy loss was suffered by Vermont farmers, as about one half the sugar maple trees were blown down. Many greenhouses were demolished, and one of the largest concerns in Rhode Island was put out of business.

A great amount of research work was carried on in colleges and experiment stations, especially with substances designed to promote the root growth of plants and various methods of growing plants without soil, particularly of carnations. The growing popularity of orchids in the United States in 1938 should also be noted.

More than a million people attended flower shows in the United States during 1938. The multiplicity of such shows is traced to the garden club movement, which is continually expanding.

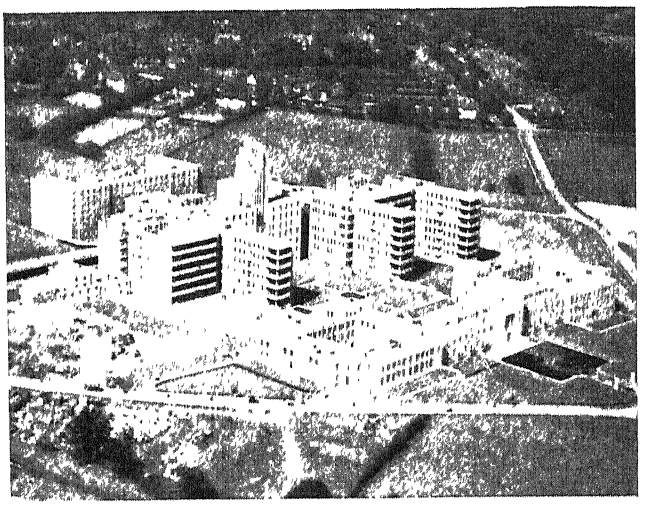
HOSPITALS. In Great Britain several particular institutions of local importance, completed their schemes for rebuilding or extension; a number have adopted the cantilever type of sun balcony. Otherwise 1938 was a period of quiet but steady development along lines indicated by movements previously established.

A survey of hospital accommodation throughout England and Wales, made during the early part of 1938 showed a



London County Council]

A HOSPITAL SCHOOL AT ASCOT



Fox Photos]

THE BIRMINGHAM HOSPITAL CENTRE, BUILT FOR A MILLION POUNDS AND OPENED IN 1938

considerable increase in the number of available beds, and especially by the transfer of hospitals from the Poor Law Authority to the Public Health Authority in accordance with the increased powers and responsibilities of local authorities under the Local Government Act of 1929. Six years ago, for example, of beds in local authority hospitals, 88,000 were in Poor Law institutions and 38,000 in Public Health hospitals, whereas by the middle of 1938 the numbers were 69,000 and 60,000 respectively. Even more important than this shifting of accommodation was the continued improvement in the standards of construction, of equipment, and of treatment in these public or council hospitals. Further, the co-operation between these hospitals and the voluntary hospitals has become increasingly close in a number of localities, and this co-operation is now being more rapidly promoted by regional arrangements, prepared in close association with government departments in pursuance of air-raid precaution schemes. Apart from this, as a result of the consultations prescribed under section 13 of the Local Government Act of 1929, a number of local authorities are receiving the more chronic cases into their own hospitals, the more acute cases being referred to the voluntary general hospital. It must be recorded, however, that a large number of authorities have even now not taken any effective action in accordance with Section 13.

During the year, too, there was a material extension of contributory schemes and provident schemes by which persons, usually within certain prescribed income limits, insure for hospital treatment and for consultation and specialist advice at hospitals. This has given rise to some difficulty, probably due to some misapprehension on both sides, between the bodies promoting and administering such schemes and the British Medical Association as representing the general body of medical practitioners. This important divergence of view should be susceptible of agreed settlement.

Very little progress has been made towards those regional arrangements among voluntary hospitals themselves which were so strongly recommended by the Voluntary Hospitals Commission as set out in *Ency. Brit. Book of the Year*, 1938. One important step, however, has been taken. A survey of the hospital accommodation of Cornwall was made jointly by the ministry of health and the British Hospitals Association, and a report has been issued which makes valuable suggestions for this region.

Another report issued during the year is the final Report

of the committee appointed by the minister of health to consider the cost of hospitals. It contains valuable information on the planning and construction of hospitals, especially with regard to maternity departments, and to accommodation for sick children, for chronic illness, for pulmonary tuberculosis, and for infectious diseases.

In New Zealand an important happening has been the passing of the Social Security Act, under which all the public hospitals of the Dominion will be made free of charge to the whole population. The Act comes into force on April 1, 1939. (H. Br)

North America. *Canada*—At Antigonish, hospital insurance was linked with the consumer co-operative movement, when co-operative members decided to take part of their profits in the form of paid-up hospitalization The Canadian Medical Association was active in 1938 in initiating the Canadian Society for the Control of Cancer and organizing cancer committees in the larger hospitals. It is also considering the possibility of certifying properly qualified laboratory technicians

United States—An ambitious National Health programme proposes the expansion of public health services, hospital facilities, and medical care. Hospital care insurance plans continue to grow at amazing pace, while in hospital construction increasing attention has been paid to insulation against cold, heat, and noise "Spot cooling" of part of the operating room has been tried with some success, and experimental work has been conducted with ultra-violet light to sterilize the air in the operating room. Increasing attention has been paid to the training of the administrator.

HOTELS, RESTAURANTS, AND INNS. Unsettled conditions in the field of international politics, the non-revival of prosperity in the United States, and the failure to return to more stable and encouraging conditions in Great Britain, were the chief adverse factors which affected the business of hotels, restaurants, and inns during 1938. Their activities are more susceptible to such major influences, favourable or otherwise, than perhaps any other trade.

Steady and satisfactory progress was maintained generally with the object of keeping hotels, restaurants, and inns abreast of the exacting demands of the public, such as reconstruction work embodying the installation of additional bedrooms and modern lighting, redecoration and refurnishing of premises on modern lines. In September the Savoy Hotel opened, for the use of its patrons and the public generally, the most up-to-date garage in London.

A subject which during 1938 necessitated the serious consideration of hotel and restaurant proprietors was the provision of adequate shelters and gas-proof rooms for the use of guests and the staff in the event of air-raids. This question had already received considerable attention prior to the international crisis in September, which, however, made the problem one of urgent necessity. Another aspect resulting from the crisis was the extent to which country hotels can play a substantial part in the national scheme for the evacuation of children from London and other large cities in the event of war.

Two matters of interest to hotels and restaurants dealt with by parliament during the year were: (1) the spread-over of holidays, and (2) holidays with pay. Hotels and restaurants naturally welcomed any scheme which would alleviate the intense activity to which they are subjected during the comparatively short holiday period.



Watney, Combe, Reid & Co., Ltd.]
"THE LABOURING BOYS" AT ISLEWORTH, MIDDLESEX ARCHITECTS, F. J. FISHER AND SONS, BUILT 1938

In Glasgow a new hotel, the Beresford, with 200 bedrooms, was opened in April. On the south coast another new and large hotel, namely the Ocean Hotel, Saltdean, was opened and offered the more popular attractions, such as a lido and bathing pool.

Milk bars, of which there are approximately 1,340, continued to flourish and invade the West End of London. Also there was an increase in the number of restaurants and cafés run on continental lines, offering a varied selection of the food specialities of foreign countries.

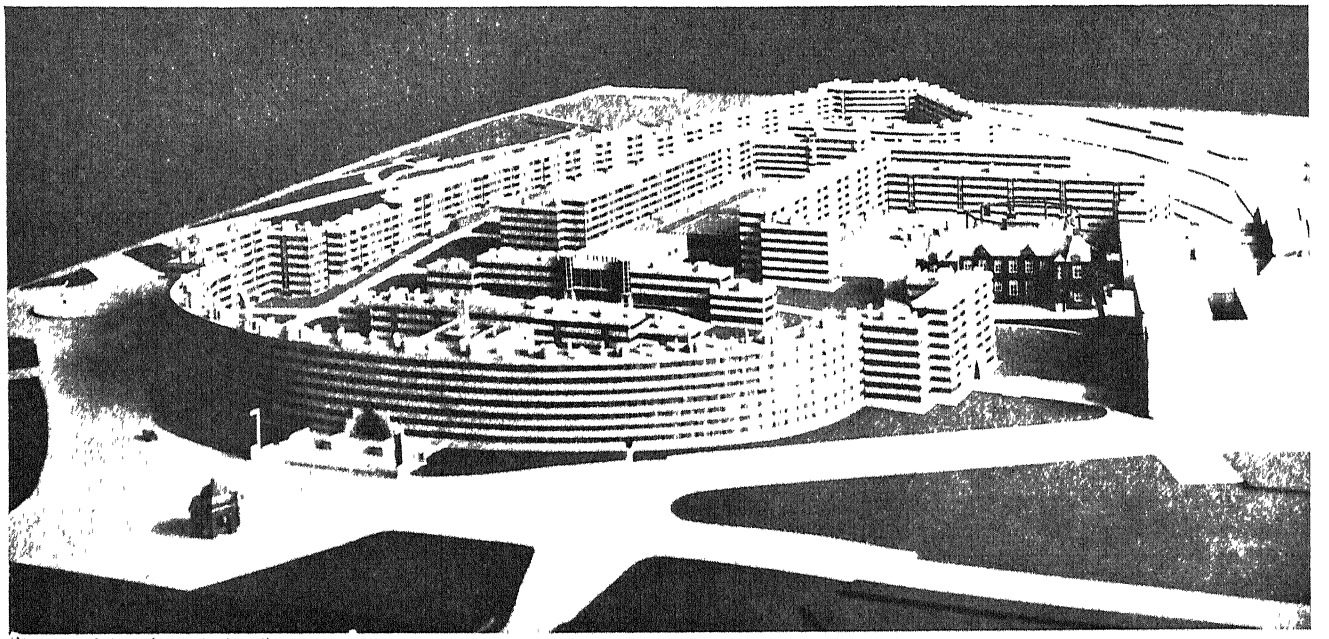
In October a notable international gathering took place, the first of its kind to be held in Great Britain following the crisis. The International Hotel Alliance, which comprises the national hotel organizations of twenty-five countries, met in Scotland for the thirty-sixth bi-annual meeting of that body. (H. S. T.)

Bibliography. *Hotelkeepers in Conference*, by leading experts; *Hotels and Restaurants in Great Britain and Ireland*, by the Hotels and Restaurants Association of Great Britain.

HOUSE, EDWARD MANDELL, American statesman, was born at Houston, Texas, on July 26, 1858, and died in New York on March 28, 1938. An account of his career may be found in the *Ency. Brit.*, vol. 11, p. 809. There is little to record of his later years, save that (in the words of the *Ency. Brit.*) "he continued his interest in international questions and maintained close relations with the chief statesmen of Europe". In 1932 he was elected a member of the International Diplomatic Academy. It may be noted that the title "Colonel", which was habitually given him, derived solely from the fact that he was at one time aide-de-camp to the Governor of Texas.

HOUSING. Great Britain continues to lead as the country which has tackled the housing problem in the most spectacular way since the War. Over three and a half million new houses have been provided in England and Wales alone, an increase of about 45 per cent since 1918 on the number of houses then in existence. The year 1938 saw the end of the first five-year programme for the clearance of slums, and during that period 800,000 people were removed from slums into new houses. During the period 168,984 houses were actually demolished. In the meantime, however, the programme has been extended to cover 430,000 houses, an increase of 54 per cent on the original plan.

The financial arrangements for this programme were



City of Leeds Housing Department]

MODEL OF NEW QUARRY HILL FLATS, LEEDS, ONE OF THE FINEST EXAMPLES OF WORKING CLASS FLATS IN EUROPE

reviewed, and the Housing (Financial Provisions) Bill was enacted to provide for the same rates of subsidy per house, whether it is built to abate overcrowding or under the slum clearance and demolition procedure.

The effect of some of the subsidies granted under this Act in increasing the densities of congested cities and their blighted areas does not appear to have been fully appreciated. The Act makes no provision for subsidized development in towns of normal healthy growth, but does subsidize, at a very heavy cost, towns whose growth has something of a pathological character. The effect of the subsidies is to produce tenement development on expensive central sites of cities and to discourage the building of cottages with gardens. It has been pointed out that under this new British legislation the cost to the National Exchequer and to the local rates is £7 millions for every 55,000 persons rehoused in tenement blocks deficient in open space, playing fields, and gardens; whereas the cost of providing houses with gardens and abundant open space for the same number of people in the country would be only £1 million, or £2 millions if additional subsidies were given to encourage factory owners to decentralize to the new area, or £3 millions if money were lavishly spent in providing the new community with all possible civic amenities. The second plan would, therefore, effect a saving of anything from £4 millions to £6 millions for each unit of 55,000 persons rehoused, part of which at least might be devoted to the improvement of central congested areas. Even from this brief argument, it can be seen that housing policy has a most marked effect on town development, and many people in Britain are urging that the effect of much of existing legislation is to encourage a wrong type of development.

This point of view is supported by the report of an Advisory Committee on the Preservation of the Countryside, presented to the Rt. Hon. Walter Elliot, Minister of Health. "It must be admitted," says the Report, "that there has been a great deal of unnecessary destruction of the countryside. The chief sins have been the misplacing of building generally and the poor design and character of individual buildings".

The divorce of housing activity, whether it takes the form of suburban dormitories or of blocks of flats on central sites, from the other facets of everyday existence —work, play, shopping, education, hospitals, entertainment, churches, etc.—has been clearly revealed in all countries as a most serious defect in housing policy. From this has sprung the need for the creation of community centres and tenants' associations, and much has already been done to fulfil this demand. Local Authorities in Britain may, under the Housing or Education Acts, as extended by the Physical Training and Recreation Act, 1937, provide or assist in the provision of a community centre, and may contribute to the maintenance costs, at the same time as the day-to-day management is left in the hands of the local residents. Youth Community Centres, the management of which is under the control of a committee composed of representatives of various boys' and girls' organizations within the district, form suitable meeting-places for joint activities by these organizations, although each maintains its separate existence. In France this development has taken a different form and, under the direction of Monsieur and Madame P. Grunebaum-Ballin, "Les Auberges de la Jeunesse" located in the new housing estates have become the natural centre for youthful social activity in each area. In block-dwelling estates in central areas, the absence of gardens and of space where children can play has also resulted in community centres, some of which include evening institutes and nursery schools supported by the local education authority. The underlying principle of all community centres is that they provide for the spontaneous and self-governed activities of the residents themselves.

In Germany, the Minister of Labour of the Reich has recognized the Deutsche Akademie für Bauforschung as the ministry's research centre on technical matters, and has particularly requested it to undertake research on the planning of housing and groups of houses, and to deal with the question of cost. In Belgium, the Société Nationale des Habitations et Logements à Bon Marché has begun a war against slums, and it is hoped that within a few years it will be possible to demolish 3,000 buildings and construct new healthy homes for 74,000 families. The Belgian government is co-operating with the building societies in carrying through this project.

In France, the new law on rents came into force on Jan.

1, 1938, and hopes that it would stimulate new building activity have been justified to some extent. The effect was to abolish the ten per cent reduction on basic rent (1914 rent plus 180 per cent) and to permit of an increase of ten per cent annually until the date when the rent will have reached a maximum of four times the basic rental value. Dwellings now becoming vacant can be let at four times the 1914 rental value.

A little explored aspect of housing, namely the problems of housing in tropical and sub-tropical countries, was the subject of research and discussion during 1938, and papers on it were submitted to the Mexico City Congress. The influence of climate, of light, sun, and orientation, rain and floods, insects, and even of mysticism and folk-lore, proved important considerations. In the Dutch Indies it was reported, " The first spade-thrust into the ground is accompanied by the recitation of a charm and the situation of the houses as regards the four winds is important. As the wife is considered to be the manager of the house, her birthday must be taken into account, and that part of the house intended to be the bedroom is chosen with every precaution and with attention to many rules."

The Mexican Congress, Mr. G. L. Pepler reports, was " almost unanimously of the opinion that the single-family house was much to be preferred to the tenement."

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(F. R. Y.)

United States. The U.S. national public housing programme made great strides in 1938. In Nov. 1937, following the enactment of the United States Housing Law, a permanent United States Housing Authority had been set up in the Department of the Interior with Nathan Straus as administrator. Besides taking over the 51 finished and unfinished demonstration projects of the Public Works Housing Division, it proceeded with great energy to organize the new decentralized programme, in which it was to be guide and fiscal agent, while responsibility for initiative, building, ownership, and administration remained with the local communities.

In view of the industrial recession, Congress increased to $800 millions the $500 millions which USHA had been authorized to lend to local authorities, increased from $25 millions to $28 millions the annual grants for which it could contract, and removed the original three-year spread in awarding loans, thus permitting a great speeding up.

By Dec. 16, USHA had signed loan contracts to a total of $320,986,000 with 75 local authorities in 29 States, the District of Columbia, Hawaii, and Puerto Rico, enabling them to build 64,451 family dwellings in 140 projects, expected to re-house more than 257,000 persons now living under sub-standard conditions. Projects actually under construction number 12, including two large ones for 5,700 families at Red Hook and Queensbridge in New York city, others at Pittsburgh, Youngstown, Louisville, Toledo, Jacksonville, Buffalo, and San Antonio, and several small ones for white, Negro, and Mexican tenants at Austin, Texas. States with the largest commitments are : New York, Ohio, Pennsylvania, Massachusetts, California. The cities which, so far, are undertaking the largest programmes are : New York, Philadelphia, Detroit, Boston, Los Angeles, New Orleans, and Baltimore.

Great efforts have been made to secure economy, and it is believed that shelter rents will be substantially lower than in the pioneer PWA developments It is estimated that they will run as low as $2 per room per month in the smaller Southern towns and that they will go little, if any, above $5 in the largest Northern cities

Resolutions adopted by a number of building trade unions not to delay public housing by jurisdictional disputes or strike for higher wages while a project is under way, have been a factor in obtaining lower construction bids.

During the course of 1938, the remaining PWA projects have been completed and tenanted. As rapidly as possible they are being leased for management to local housing authorities. In nearly all cases they are 100 per cent occupied, have long waiting lists and an almost perfect score for rent collection. They accommodate more than 21,000 families.

The three Green belt towns near Washington, Cincinnati, and Milwaukee are all occupied now and serve as object lessons in community planning and land utilization. The first is also a laboratory for consumers' co-operatives. They are not primarily housing developments, nor are they connected in any way with the United States Housing Authority.

An outstanding event of the year was the constitutional amendment in New York State, ratified by a two-to-one vote, making possible State and municipal housing loans and subsidies. New York is the first State to take such action.

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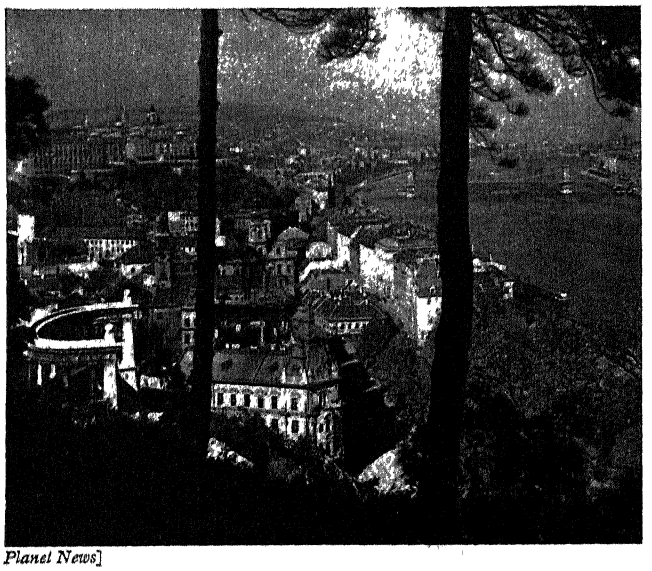
HULL, CORDELL (1871–), American lawyer and statesman, Secretary of State of the U.S.A. after a distinguished career as lawyer, judge, and representative in his native State of Tennessee, was a member of the 60th to 66th Congresses, 1907–21, and of the 68th to 71st, 1923–31 ; in 1931, he was elected U.S. Senator for Tennessee for the term 1931–37, but resigned on his appointment, in March 1933, as Secretary of State in Roosevelt's cabinet.

Secretary Hull, of whom an account will be found in the *Ency. Brit.*, vol. 11, p. 825, served in the Spanish-American War (1898) as captain of infantry, and was for nearly twenty years on the ways and means committee of the House of Representatives ; from 1921 to 1924 he was chairman of the Democratic National Committee ; he was chairman of the American delegation to the London Monetary and Economic Conference of 1933, and later in the same year headed his country's delegation to the sixth International Conference of American States at Montevideo, filling a similar role in the conferences held at Buenos Aires and Lima in Dec. 1936 and 1938 (*see* PAN-AMERICAN CONFERENCE). Throughout his public life Mr. Hull has shown himself an upholder of the rule of law, a consistent lover of peace, a worker for military and economic disarmament, a believer in the interdependence of nations, and a staunch opponent of American isolationism. At the end of May 1938, and again on its tenth anniversary in August, he reminded the signatories of the Kellogg-Briand pact—including Germany, Czechoslovakia, Italy, and Japan—that they were under an obligation to seek a pacific settlement of disputes. Mr. Hull is married, but has no children.

HUMPHREYS, MRS. W. DESMOND ("**Rita**"), British novelist, was the daughter of John Gilbert Gollan, of Gollanfield, Inverness-shire. She died near Bath on Jan 1, 1938. Writing under the pen name of "Rita", she was one of the most prolific novelists of her time and enjoyed a considerable popularity, especially among readers of the pre-war generation. She achieved her reputation, if she gained little else, from such novels as *The Sin of Jasper Standish*, *Six Mistresses*, *A Woman of Samaria*, and *Jill-all-Alone*. She was married twice, the second time to Mr Desmond Humphreys.

HUNGARY. At the Budapest meeting of the Rome Protocol States (Jan. 10–12, 1938), Hungary showed some signs of leaning on Austria, then still independent. The German propaganda against Austria found its counterpart in Hungary, and on Feb 22 the government arrested the Nazi chief, M. Szálasy, leader of the "Party of National Will", and 72 of his followers, closing all Nazi parties and branches. After his occupation of Austria, Herr Hitler declared the new German-Hungarian frontier inviolable, and Hungary officially welcomed the *coup*, but the Burgenland was not restored, and Nazi propaganda redoubled, especially after a victory in a by-election on April 1, causing the Regent to warn the extreme Right not to introduce politics into the army. On March 9 M. Imrédy, governor of the National Bank, had entered the government as minister without portfolio. To his initiative were due a five years' programme, enunciated by M. Darányi on April 4, providing for the expenditure of one million pengö (to be raised sixty per cent by a capital levy on large fortunes, forty per cent by borrowing) on defence, communications, and rural development; and a law limiting to twenty per cent the proportion of Jews who might be employed in certain occupations. The Franchise Reform Act, introduced in the previous December, and a severe Press law, were also adopted. On May 13, the Upper House having protested against M. Darányi's weakness towards Nazi propaganda, M. Imrédy became premier and partially reconstructed his cabinet. His programme included compulsory military service, labour camps, accelerated land reform, a steeply graduated income tax, family allowances, the minimum wage in agriculture, and other social services.

In July the Prime Minister and Foreign Minister visited Rome, where the validity of the Rome Protocols, as between the surviving partners, was emphasized. The centre of interest, however, now lay in the German-Czechoslovak



Planet News]

BUDAPEST



Kosmos—J. Allan Cash]

CARP FISHING IN HUNGARY ON ONE OF THE ARTIFICIAL BREEDING LAKES OF THE HORTOBÁGY PLAIN. THE FISH APPEAR, CROWDED TOGETHER, IN THE FINAL LOOP OF NET

crisis, where Hungary had her own claims for revision in Slovakia, but her own apprehensions of Germany. On Aug. 21–26 the Regent, with the Premier, Foreign Minister (M. de Kánya), and Minister for War, was in Germany, and it was expected that offers would be made for a pact of common action against Czechoslovakia. No such pact was made; indeed, during the visit the Bled Agreement with the Little Entente (*q.v.*) was announced and the Supreme Court confirmed M. Szálasy's heavy sentence. When the Czechoslovak crisis became acute, Hungary behaved with moderation, only indicating that the Magyars in Czechoslovakia ought not to receive less than the German and other minorities. The Hitler-Chamberlain agreement, however, appeared to forget Hungary. On Sept. 10 Signor Mussolini at Trieste publicly supported Hungarian demands, and on Sept. 20 MM. Imrédy and Kánya flew to Berchtesgaden to see Herr Hitler. Prague was now notified that Hungary expected the Magyar question in Czechoslovakia to receive similar treatment to the German; foreign capitals were notified of Hungary's claims. On Oct. 2, following the Munich agreements, Prague was asked to open direct negotiations. These began Oct. 7 at Koumárom, but although Czechoslovakia yielded to certain demands (release of Magyar political prisoners, token occupation of two small areas) her successive offers fell far short of Hungary's demands, which were for immediate cession of all districts in which the 1910 census showed a Magyar majority, with self-determination for the Slovaks and Ruthenes. Direct negotiations broke down on Oct. 13. Hungarian emissaries visited Rome, Berchtesgaden, and Warsaw. On Oct. 24 Hungary proposed immediate occupation of the areas which Czechoslovakia was prepared to cede, with plebiscites under

neutral supervision for the areas disputed; she would accept arbitration if Czechoslovakia would not accept plebiscites. On Oct. 27 it was agreed to accept the arbitral award of Germany and Italy. This was delivered in Vienna on Nov. 2. It gave Hungary, roughly, the ethnographic line of the 1910 frontier, including Kassa, but excluding Pozsony and Nyima · a total gain of about 4,630 sq. m., with 1,060,000 persons. The occupation began Nov. 5; the Reincorporation Bill was passed Nov. 12. The result was hailed with great satisfaction, except as regards Ruthenia, where Hungary had greatly desired a common frontier with Poland Agitation and guerrilla warfare went on in this area for some weeks. On Nov. 15 the government was reconstructed, but was defeated on Nov 23, M Imrédy desiring to amend parliamentary standing orders in order to hasten the adoption of his programme The Regent refused to accept his resignation, and the government was again reconstructed. M. de Kánya resigned on Nov 28, Count Csáky succeeding him

Hungary was released from the financial control of the League of Nations as from March 31, 1938. (C. A. M.)

Area and Population :
Area (est. Nov. 30, 1938) 40,500 sq. miles.
Population (est. Nov. 30, 1938) 10,049,000.
Chief Towns (pop. Dec. 31, 1937) : Budapest (1,059,287), Szeged (140,341), Debrecen (126,696), Kecskemét (83,010).
Regent. Admiral Miklós Horthy.
Language. Hungarian.
Religion. Christian (Roman Catholic, 64·9 per cent; Protestants, 27 per cent; Greek Catholics, 2·3 per cent).

Production 1936–37 :

Wheat	1,963,827	metric tons
Rye	617,891	,, ,,
Barley	556,919	,, ,,
Oats	270,403	,, ,,
Maize	2,758,738	,, ,,
Potatoes	2,559,352	,, ,,
Beet Sugar	1,012,586	,, ,,
Lignite	8,055,000	,, ,,
Coal	917,000	,, ,,
Pig Iron	357,935	,, ,,
Steel	665,323	,, ,,
Bauxite	532,656	,, ,,
Pigs (number)	3,110,060	
Cattle (,,)	1,882,031	
Sheep (,,)	1,628,730	

Labour and Industry

Index of Industrial Production (av. 1937)	137·3
(av. 1929 = 100) (av. April–June 1938)	124·4
Number Employed (av. 1937)	1,093,000
(av. 1929 = 1,051,000) (av. June 1938)	1,159,000
Unemployment, applications for work (av. 1929=15,173) (av. 1937)	48,359
applications for work (av. June 1938)	45,415

Overseas Trade 1937 :

Imports	483,581,000 pengös
Exports	588,015,000 ,,

Communications 1938 :

Roads, public	18,861 miles
Railways, open to traffic	5,381 ,,
Waterways, navigable	1,018 ,,

Finance and Banking :

Revenue (est. 1938–39)	1,334,972,000 pengös
Expenditure (est. 1938–39)	1,334,869,000 ,,
Public Debt (June 30, 1938)	1,760,189,000 ,,
Notes in Circulation (Dec. 15, 1938)	767,386,705 ,,
Gold Reserve (,, ,,)	210,354,954 ,,
Exchange Rate (1938)	23½–24 pengös = £1 stg.

Education 1936–37 :

Elementary schools,	6,886 ;	scholars,	961,700
Continuation ,,	5,726 ;	,,	311,770
Universities	4 ;	students	8,137

Defence :
The Royal Hungarian Army consists of seven Army Corps and two Cavalry Brigades. Recruiting is organized on a basis of both general and compulsory military service. Budget expenditure for the Army in 1938–39 was 155,087,000 pengos.
Motor Vehicles (Dec. 31, 1936) : Cars and taxis, 13,978; lorries, buses, etc., 4,588, cycles, 9,512.

HUNTING. A widespread outbreak of foot-and-mouth disease among farm livestock in England during the 1937–38 hunting season prevented many packs from leaving kennels for long spells, and sport was further hindered by snowstorms, frost, gales, heavy rains, and finally drought! Scent and sport were generally poor in the early part of the season. Although many days were lost by movement restrictions, imposed by the Ministry of Agriculture, the Duke of Beaufort's hounds hunted 171 days and killed 160½ brace. The Bicester and Warden Hill, hunting 130 days, killed 106 brace, a record for their country Two other hunt records were made : the South Oxfordshire with 41 brace killed, and the Isle of Wight with 34½ brace. Warwickshire accounted for 109 brace in 125 days, after an uneven season, and their neighbours, North Warwickshire, killed 67 brace. The Cattistock accounted for 100 brace, and ran to ground 90½ brace in 158 days. The Heythrop in 116 days killed 78½ brace. In spite of being stopped for nine weeks, the Southdown killed 74 brace. The Meynell killed 72½ brace and marked 33½ brace to ground, a fox from Alkmonton providing them with a run of two hours ten minutes, covering twenty miles. The tallies of other leading packs were : Cotswold, 69½ brace; North Cotswold, 75 brace; Crawley and Horsham, 70½ brace; Fitzwilliam, 60 brace; Middleton, 51½ brace, Puckeridge, 57½ brace; Quorn, 78 brace; Taunton Vale, 50½ brace; and Tynedale, 61 brace.

In Ireland the County Galway pack (" The Blazers ") killed 50½ brace, Kildare, 36½ brace, and Kilkenny, 38 brace (and fourteen badgers) In Scotland, the Dumfriesshire killed 45 brace.

Many famous Masters of Hounds died during the season, including Lord Daresbury, Belvoir, 1896–1912; Sir

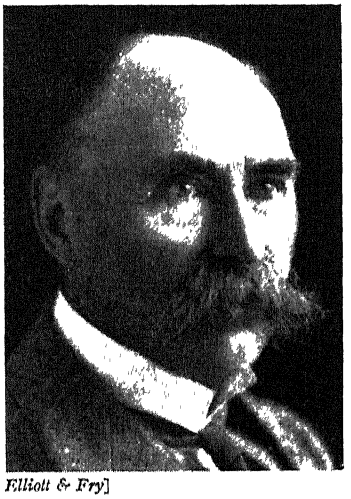


Sport & General]
OPENING MEET OF THE SOUTH HERTFORDSHIRE, AT KING'S WALDENBURY, HERTFORDSHIRE

Charles Frederick, Pytchley, 1919-21, and formerly its secretary for many years; Lieutenant-Colonel Douglas Seckham, South Staffordshire, 1930-35, Lieutenant-Colonel E. D. Kennedy, Ludlow, 1931-37; Mr. Stanley Brotherhood, Joint Master of the Fitzwilliam (Milton), 1919-22; Mr. E. Pemberton-Steer, Llangibby, 1922-30; Major A. E. Burnaby, Quorn, 1919-32; Colonel A. D. Mackintosh, Glamorgan, 1897-1906; and Sir Leonard Powell, Tedworth, 1924-25. The late Major Ernest William Shackle, Master of Berks and Bucks Farmers' Staghounds since 1914, will be missed in his sporting country. Mr. W. Wigmore, Ross-on-Wye, Master and Huntsman of the Ross Harriers 1894-98, died at the age of 86.

The number of hunts in Great Britain remains about the same as in the previous season, a few more packs of Beagles having lately been started. (G. T. B.)

HYDE, DOUGLAS, LL.D., D.Litt. (1860–), first *Uachtaran* (president) of Eire, scholar, historian, and poet, comes of old Anglo-Irish stock, and was born at Tibohine, co. Roscommon, of which his father was (Anglican) rector. For his active interest in the Irish national life and language, *see* his biography in the *Ency. Brit.*, vol. 11, p. 957. He was professor of Modern Irish in the National University from 1909 to 1932. With the possible exception of W. B. Yeats, Dr. Hyde has done more for the revival of Gaelic than anyone. Many of his poems, plays, retellings of old legends, etc., are published under his pseudonym *An Craoibhin Aoibhinn* ("the delightful little branch", *i.e.* Ireland).



Elliott & Fry]
DR. DOUGLAS HYDE

Some months before the coming into force of Eire's new constitution in Dec. 1937, Dr. Hyde, a lifelong Protestant, had been suggested as a non-party candidate for the presidency, and in April 1938 he was invited to the office in a joint letter from Mr. de Valera and Mr. Cosgrave; he accepted, was unopposed, was declared elected on May 4, and on June 25 was installed with fitting ceremonial in Dublin Castle.

Dr. Hyde married Miss Lucy Kurtz, of mixed English and German descent, in 1892; of their two daughters the elder died unmarried in 1912, and the younger is the wife of James Sealy, Judge of the Circuit Court. Mrs. Hyde died on Dec. 31, 1938.

See Diarmid Coffey, *Douglas Hyde, President of Ireland* (Dublin, 1938); and the autobiographical works, *Mise agus an Connradh* ("Myself and the League") and *Mo Thuras go hAmerice* ("My Journey to America"), both Dublin, 1937.

HYDERABAD, under the rule of His Exalted Highness the Nizam (Nawab Sir Mir Usman Ali Khan), is the largest of the Indian states. The Nizam's trusted adviser, Sir Akbar Hydari, who is now president of the Council, has been active in paving the way for federation, as well as in introducing some measure of popular influence into the State government. Political agitation, however, is discouraged; and in Sept. 1938 the government vetoed the formation of a Congress party organization in the State. A recent inquiry into the condition of the peasantry, who are mainly Hindus though the ruler is a Moslem, has revealed agricultural indebtedness in the neighbourhood of 64¼ crores of rupees (£48 millions), in spite of the State edicts against usury; and measures are being taken to check the further acquisition of land by the money-lending classes. Osmania is rapidly becoming a university city worthy of the name, and the great experiment of using Urdu exclusively as the medium of instruction makes progress, although the bureau which is engaged on translating European text-books into that language is said to have had to coin over 40,000 technical words. (Me.)

Area and Population :
Area 82,698 sq. miles.
Population (1931) 14,436,148.
Ruler. The Nizam (Nawab Sir Mir Usman Ali Khan).
Language. Telugu, the chief.
Religion. Hinduism mainly.
Production 1936 :
Cotton, 3,000,000 acres; coal, 800,000 tons.
No. of factories 519, including 6 cotton mills.
Communications and Transport :
Road motor service, 4,000 miles; 307 passenger vehicles.
Railways, 811 miles broad gauge, 654 miles narrow.
Motor vehicles licensed (Jan. 1, 1937): cars and taxis, 3,934; commercial vehicles, 663; motor-cycles, 360.
Finance :
Revenue (approx.): Rs. 9,00,00,000 (Osmania).
Currency: The Rupee (Osmania Sicca) exchanges with the rupee of British India at approx. 116 to 100.
Education 1935-36 :
4,800 institutions—Osmania University (Hyderabad) 1,193 students.
Army. 18,489 all ranks.

HYDROPONICS. Hydroponics is the method of crop production in liquid culture media. Shallow basins filled with water to which the necessary nutrient salts are added, and a seedbed composed of vegetable litter or other suitable porous materials resting on wire netting immediately above the water, are the essential features of the equipment. Seeds are sown or seedlings set in the seedbed in which the sprouting or growing plants strike roots which ultimately extend into the nutrient solution below. Inception of rooting depends on proper air, moisture, and temperature conditions of the seedbed. The subsequent growth and general vigour of the crops then depend on the extent to which these physical conditions of the seedbed are maintained, which must be in accordance with the varying requirements of the plants, and also on the properties of the nutrient solution. The physical properties of the seedbed play an important role in hydroponics, as it is a means for controlling certain ecological factors. The composition and character of the nutrient solution is important, but has been generally overemphasized by failure to co-ordinate cultural technique with ecologic conditions.

Objectively, hydroponics is soil-less agriculture, but by etymological standards crop production without soil cannot be designated as agriculture. The first announcement in scientific literature that crop production without soil was feasible was a brief paper "Aquiculture—A Means of Crop Production". Since it was subsequently learned that the Latinized term had been appropriated in other scientific connexions, *hydroponics* was chosen, which has analogy in *geoponics* (*ge* = earth and *ponos* = labour or working), the Greek word for field husbandry used during the middle ages.

Nutrient solutions have been used extensively to grow plants in experimental studies for three-quarters of a century. Seedlings, usually cereals, were suspended by corks in small glass or earthenware containers of nutrient solutions prepared from relatively pure or distilled water and refined chemicals. Usually a few weeks' growth and a few

grams of material sufficed for the purposes of the investigations, but in some experiments plants were grown to maturity. The literature on these investigations contained no suggestion of the possibility that water culture might be used to grow crops without soil.

Hydroponics was the result of experiments started in 1927 designed to (1) develop cultural technique whereby yields of crops could be obtained which would compare favourably with known production by agriculture; (2) adapt commercially available materials—ground water, crude chemicals, and ordinary building materials—for water culture, since the pure materials hitherto considered necessary were economically prohibitive, (3) devise equipment as a substitute for fertile land, both as to function and location, and adopt cultural technique to climatic conditions.

Use of liquid culture media for floral production (tuberous begonias) on a commercial scale began in 1934, and for vegetables (tomatoes) in 1935. These establishments were in California and were followed by production plants in other states of the U.S. organized as experiments—the owners co-operating with the originator in developing appropriate cultural techniques which were more or less different in each place. In each case cultural technique and nutrient solutions were determined by the character of the water, equipment, materials, and climate.

While it appears physiologically possible to grow any field, vegetable, or floral crop without soil, nevertheless the cost of the equipment, and in some cases the cost of the chemicals alone, preclude economic production. This applies to low tonnage crops which are marketed as dry matter, such as rice, cotton, and wheat. Crops like potatoes or tomatoes, which are composed predominantly of water—hence are high tonnage crops—have a low chemical cost and can be grown economically. The production of various floral crops appears economically promising.

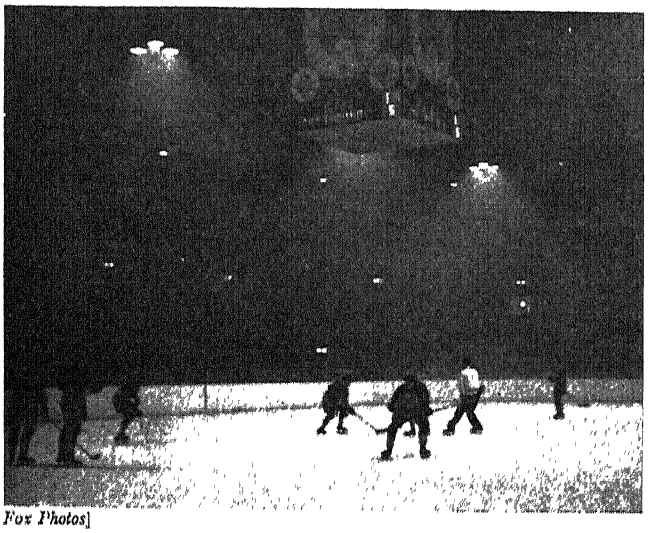
Production of crops in sand, cinders, or gravel to which solutions of nutrient salts are added is not hydroponics. These materials, like any field soils, are porous solids that hold liquid as a thin film around various-sized particles. Denser stands of certain crops, with resulting higher yields, can be grown where nutrient solution exists in the free state than where it is held as a thin film around solid particles.

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I

ICE HOCKEY. In the 1937-38 World Championships, held at Prague in Feb. 1938, Canada were again the winners, defeating Great Britain (runners-up) by 3-1; Czechoslovakia were third, and Germany fourth, the other contestants being the U.S.A., Switzerland, Poland, Hungary, Lithuania, Rumania, Latvia, Norway, Sweden, and Austria. In the European Championships, also at Prague, Great Britain retained the title, defeating Czechoslovakia by 1–0, Germany was third.

The British Ice Hockey Association's National Tournament was won by the Wembley Lions (Harringay Racers runners up), and the final results of the National League, London Cup tournament, and London Provincial League were as below (*note*: W. Won, L. lost, D. drawn, and Pts. points obtained).



Fox Photos]

ICE HOCKEY: BRIGHTON TIGERS *v.* HARRINGAY GREYHOUNDS

It is a sign of the increasing interest taken in the sport that in the season under review competitors in the London Provincial League increased to eleven, the newcomers being Wembley Colts, Princes (Streatham), Oxford and Cambridge Universities, and Cambridge Grads; further, a Junior League has been formed, and most of the rinks now train boys up to sixteen, over 300 receiving regular coaching at Harringay alone. In Scotland also the sport is making rapid headway; during the year rinks have been opened at Dundee, Kirkcaldy, and Falkirk, in addition to those already doing so well at Glasgow and Perth.

The British Ice Hockey Association is considering the framing of a new rule to prevent time-wasting by deliberately hitting the puck the length of the rink or out of play, and an attempt is being made to popularize basket-ball on ice-rinks, a short season from May to July being suggested for 1939, to close with a series of exhibition games by three leading American clubs.

United States. The national A.A.U. ice hockey championship for 1938 was won by the Boston Olympics over the Brock-Hall Hockey club, 8–0, played in the Boston Arena, Boston, Mass., Feb. 20–27. In professional ice-hockey, the Chicago Blackhawks team was the world's title holder, acquiring the Stanley Cup by beating the N.Y. Americans for the best four out of seven games. The Boston Bruins led in the American division of the National Hockey League, Toronto heading the Canadian division.

In the International American Hockey League, the Providence team led in the Eastern division, and the Cleveland team in the Western division.

ICELAND. In Feb. 1938, a gale of exceptional severity wrought extensive damage throughout the island, and, on the east coast, a wind of hurricane violence completely blew away a remote village and almost razed another. In July the Crown Prince (of Denmark and Iceland), during a visit with the Crown Princess, blasted the first rock on the site of a new northern Iceland power station. On December 1, Iceland celebrated the twentieth anniversary of her independence. The year's fisheries were profitable.

Area and Population:
Area 39,709 sq. miles.
Population (Dec. 31, 1936) 116,880.
Chief Town: Reykjavik (pop. 1935, 34,231).
Ruler. King Christian X.
Language. Icelandic.
Religion. Christian (Lutheran).
Production 1935:
Potatoes . . . . . 4,600 metric tons
Wool (export 1936) . . . 800 ,, ,,
Sea Fisheries . . . . 25,300,000 kronur
Sheep (head) 656,113; cattle, 35,608; horses, 44,926.
Overseas Trade 1936:
Imports, 43,053,000 kronur; exports, 49,642,000 kronur.
Roads. Main, 2,734 miles.
Finance and Banking:
Revenue (1936) . . . . 16,142,702 kronur
Expenditure (1936) . . . 16,137,147 ,,
Notes in circulation (Dec. 31, 1937) . 12,070,000 ,,
Gold Reserve (,, ,, ,,) . 2,620,000 ,,
Currency . . . . 22·14 kronur = £1 stg.
Education: Compulsory; 8 secondary schools, 1 university.

NATIONAL LEAGUE

Teams	W.	L.	D.	Pts.
Harringay Racers	17	4	3	37
Wembley Monarchs	10	10	4	24
Wembley Lions	7	7	10	24
Harringay Greyhounds	9	10	5	23
Brighton Tigers	10	12	2	22
Earl's Court Rangers	8	11	5	21
Streatham	7	14	3	17

LONDON CUP TOURNAMENT

Teams	W.	L.	D.	Pts.
Wembley Lions	9	1	2	20
Harringay Racers	6	3	3	15
Harringay Greyhounds	6	4	2	14
Streatham	5	5	2	12
Wembley Monarchs	3	6	3	9
Brighton Tigers	2	7	3	7
Earl's Court Rangers	2	7	3	7

LONDON PROVINCIAL

Teams	W.	L.	D.	Pts.
Streatham Royals	5	0	3	13
Earl's Court Marlboroughs	6	1	1	13
Earl's Court Redwings	3	4	1	7
Sussex	3	4	1	7
United Hospitals	3	5	0	6
Wembley Terriers	1	7	0	2

IFNI: *see* SPANISH WEST AFRICA.

INCOME-TAX. The position in the chief English-speaking countries is here reviewed.

United Kingdom. The Finance Act, 1938, raised the standard rate of income-tax in the United Kingdom to 5*s.* 6*d.* in the pound, the reduced rate chargeable on the first £135 of "taxable income" remaining unchanged at 1*s* 8*d.* in the pound. The main personal allowances were continued, subject to a few minor amendments. Further complicated provisions were enacted designed to check the avoidance of income-tax and sur-tax by the use of trusts and settlements. The sur-tax on all incomes exceeding £2,000 remained unchanged at rates varying from 1*s.* o*d.* in the pound up to 7*s.* 6*d.* in the pound on any excess over £50,000, plus the further ten per cent imposed in 1931.

In Eire the income-tax system follows the main lines of the United Kingdom system. The standard rate of tax for the year 1938–39 is 4*s.* 6*d.* in the pound, the reduced rate payable on the first £100 of "taxable income" being 2*s.* 3*d.* in the pound. Sur-tax is chargeable on all incomes exceeding £1,500 at progressive rates varying from 6*d.* in the pound up to a maximum of 6*s.* 3*d* in the pound on any excess over £20,000 per annum.

Turning to a consideration of income-tax in the overseas Dominions, in all but New Zealand and India there is one common feature, which is shared with the United States. That is the existence of two parallel income-tax systems, federal and provincial There is no link between the tax chargeable under the two systems except in South Africa, where provincial income-tax and super-tax are levied as percentages, varying in each province, of the Union Tax.

Australia. The Commonwealth makes the distinction between earned and unearned income. Rates for individuals rise progressively with the amount of income; companies are charged tax at a flat rate, and a shareholder is not normally required to pay tax on dividends unless his personal rate of tax exceeds the flat rate payable by the company concerned. Exemption to individuals is given on a sliding scale that diminishes towards vanishing point as the income rises: for the Commonwealth it is £250, which is reduced by £1 for every £2 by which the taxable income exceeds £250. Commonwealth rates—these rates need to be increased in each case by 15 per cent—rise to a maximum on earned incomes over £6,900 a year, when 2*s.* 11·3*d.* in the pound is payable on the income up to that figure and 5*s.* 8·85*d.* on the excess; on unearned incomes the maximum is reached at £3,700 a year, when 3*s.* 6·57*d.* in the pound is payable on income below this amount and 6*s.* 9*d.* on the excess. The flat rate for companies is 1*s.* o*d.* in the pound

All but one of the states have some form of super-tax, or special income-tax, as it is called, levied on incomes above a certain amount. In taxation of companies, special rates are payable by life insurance companies in some states; in Queensland the tax on companies varies not only with the nature of their business but with the size of their profits, reaching its maximum of 7*s.* 3*d.* in the pound with monopoly companies whose profits exceed 16 per cent.

New Zealand. An exemption of £210 is granted to individuals. The rates of tax vary from 1*s.* 8*d.* to 8*s.* 2*d.* in the pound for individuals and from 1*s.* to 7*s.* 6*d.* in the pound for companies, the maximum rates in each case being attained on incomes of £8,950. The additional Unemployment Relief Tax has now been transformed into the Social Security Contribution, payable at the rate of 1*s.* in the pound.

Canada. The Dominion system, in 1938, granted $2,000 exemption to married persons or those with certain dependants and $1,000 to others. Thereafter tax payable by individuals rises from 3 per cent on the first $1,000 of taxable income to 56 per cent on any excess over $500,000. Persons with an income over $5,000 also pay an "additional rate of tax", of 5 per cent of the tax already payable by them. There is also a sur-tax, from which the first $5,000 of any type of income and the first $14,000 of earned income are exempt: it begins at 2 per cent and rises to 10 per cent on incomes above $200,000. Companies pay 15 per cent

Two of the provinces, New Brunswick and Nova Scotia, have no provincial income-tax system, contenting themselves with taxing corporations. Quebec also has no specific income-tax, but levies corporations, firms, or persons carrying on business at rates varying with the nature of the business. Elsewhere rates vary from Prince Edward Island, whose maximum rate of tax is 10 per cent, to Manitoba whose maximum rate of 40 per cent is reached when the income passes $500,000.

South Africa. The Union income-tax rate, as it applies to individuals, is thus defined: 1*s.* o*d.* in the pound, plus $\frac{1}{2000}$th of 1*d.* for every pound in the taxable income, subject to a maximum rate of 2*s.* o*d.* in the pound, and then less 20 per cent. Exemption, as in Australia, is on a downward sliding scale: the basic exemption of £400 is reduced for married persons by £1 for every £10 by which the income exceeds £600, and for single persons and companies by £1 for every £1 by which the income exceeds £400. Gold and diamond-mining companies pay 2*s.* $4\frac{1}{8}$*d.* in the pound; other companies 2*s.* o*d.* Super-tax is payable by individuals whose incomes exceed £2,500, an abatement of £2,500 being reduced by £1 for every £1 by which the income exceeds £2,500. Super-tax is charged at 1*s.* o*d.* in the pound plus $\frac{1}{600}$th of 1*d.* in the pound for every £1 of the amount chargeable, subject to a maximum rate of 5*s.* o*d.* in the pound.

In the provinces, income-tax is divisible into two parts. First there is income-tax properly so called, defined as a percentage of the Union income- and super-taxes, a percentage which varies from 10 to 30 per cent. Secondly there is a personal tax on all residents over 21 years of age. This is what used to be called in Mediæval England a poll tax. Where it varies with income, it does so within narrow limits, starting in the Cape, for instance, at 10*s.* o*d* and rising, with increases of income, to a maximum of £5.

British India. The exemption limit for individuals is Rs. 2,000 and there are no abatements if the income exceeds this sum. There are no allowances for children or dependants but certain allowances are made in respect of life-insurance premiums. On individuals, the income-tax rates rise from 3·35 per cent on incomes of Rs. 2,000 to 14·67 per cent on those over Rs. 1,000,000. Companies pay 14·67 per cent on their full taxable income. For super-tax purposes the first Rs. 30,000 of income is exempted. Successive blocks of income are then charged at rates rising from 5·02 per cent to 42·32 per cent on incomes exceeding Rs. 550,000. The super-tax rate for companies is 6·77 per cent on the amount by which the total income exceeds Rs. 50,000. (H. E. C.)

United States. Income-tax changes in the United States during 1938 were concerned largely with (1) the Federal Corporation income-tax, and (2) the Federal tax on capital gains and losses. The income-taxes imposed by States remained practically unchanged.

Federal income tax collections in the fiscal year ended June 30, 1938, amounted to $2,580 millions or 43 per cent of the total Federal internal revenue and customs. Individual and corporate income taxes shared approximately equally in this total. In most years, the collections from corporations have exceeded those from individuals. State collections from these sources for the fiscal year 1938 are estimated to have amounted to nearly $375 millions or over 10 per cent of State receipts.

The Federal government's individual income tax consists of a 4 per cent normal tax and a sur-tax ranging from 4 to 75 per cent applicable to incomes over $4,000 after allowance for exemptions and credits. The personal exemptions allowed are $1,000 for a single person, $2,500 for married persons, and $400 for dependants. The earned income credit, applicable against the normal tax, is at a rate of 10 per cent, allowable only on amounts of earned income not in excess of $14,000, with $3,000 of income considered earned whether or not actually earned. These provisions serve to exempt single individuals with net incomes of $1,111 or less and married persons of $2,778 or less, if without dependents, and restrict income-tax liability to comparatively few individuals 2,861,108 in 1936.

A general income tax upon individuals is levied by 29 States. In all but one of them the rates are progressive, ranging from a minimum of 1 to 3 per cent to a maximum of 3 to 15 per cent. Five additional states tax particular sources of income at flat rates. On the whole, State income-taxation is directed toward the low-income groups, exemptions being less generous. Although some of the States preceded the Federal government in employing the income-tax, more than half of those which now impose it did not first adopt it till 1929 or after.

Corporation Tax. Under the Federal Revenue Act of 1936 corporations were subject to a normal income-tax graduated from 8 to 15 per cent and a sur-tax on undistributed profits graduated from 7 to 27 per cent. Under the Revenue Act of 1938 the undistributed profits tax was, in effect, repealed for small corporations with net incomes of $25,000 or less, and the rates applicable to corporations with net incomes of more than $25,000 were, in effect, reduced to a maximum of 2½ per cent. The rates of tax on corporations with net incomes of $25,000 or less were graduated from 12½ per cent of their income not in excess of $5,000 to 16 per cent of that in excess of $20,000. On corporations with net incomes of more than $25,000 the rate for the tentative tax is 19 per cent. This tentative tax is, however, reduced by certain credits of dividends received and dividends paid; the final tax on a corporation that receives no intercorporate dividends, and distributes all its income, is 16½ per cent.

Under the Revenue Act of 1936, certain specified classes of corporations like banks and insurance companies were subjected to a flat 15 per cent rate of tax in lieu of the graduated normal income-tax; these special classes are retained, and the rates on them were increased to 16½ per cent.

In general the Revenue Act of 1938 retains the principle of the undistributed profits tax, adopted for the first time in the Revenue Act of 1936. The main objective of this tax is to make the individual income-tax apply more uniformly as between corporate equity owners with interests in undistributed profits and those directly participating in businesses organized as proprietorships and partnerships. Under the individual income-tax law in the United States, the profits of corporations are taxable to shareholders only as they may be distributed and received in the form of dividends, whereas the profits of proprietorships and partnerships are taxable to the individual owners, irrespective of distribution.

At the close of 1938, general corporation income-taxes were also levied by 32 states, the rates usually ranging between 2 and 6 per cent.

Capital Gains and Losses. The Revenue Act of 1938 also made a significant change with respect to the income-tax treatment of capital gains and losses of individuals. It divided them into short-term and long-term capital gains and losses, short-term gains and losses being those realized from the sale or exchange of capital assets held 18 months or less. The percentages of gain or loss taken into account in computing net income are: 100 per cent if the capital assets were held 18 months or less; 66⅔ per cent if held for over 18 months but not over 24 months; and 50 per cent if held for over 24 months. If assets are held 18 months or less, gains thus computed and not offset by allowed losses are included with other income subject to full normal tax and sur-tax rates. Losses are allowed, within any one year, only to the extent of gains on such transactions. If assets are held more than 18 months, net gains are included with other income subject to normal tax and sur-tax rates, or are segregated and taxed at 30 per cent, whichever method results in lesser total tax. Net losses are deducted from other net income or 30 per cent of them is credited against the tax computed on net income before deducting the net loss, whichever method gives the greater tax. Depreciable property used in a trade or business is not treated as "capital assets".

The 1938 Act (except for the change in definition of capital assets noted above) made no change in the treatment of capital gains and losses of corporations. Such gains are included to the extent of 100 per cent in the taxable income but the deduction for losses is limited to $2,000 plus capital gains.

INDEPENDENT LABOUR PARTY, THE. During 1938 the membership of the British I.L.P. remained in the neighbourhood of 12,000 until the war crisis in September, when applications for membership were received in large numbers. The strength of the party lies mostly in the industrial centres, and particularly the West of Scotland, Lancashire, Yorkshire, and South Wales, but there is growing activity in the London area. The I.L.P. Parliamentary Group, all from Glasgow and consisting of J. Maxton (Bridgeton), G. Buchanan (Gorbals), J. McGovern (Shettleston), and C. Stephen (Camlachie), exert an influence in parliament beyond their numbers, and this reflects the position of the party in the country in the wider working-class movement. Early in October, during the special session of parliament, Mr. Maxton, and afterwards Mr. McGovern, created no small sensation by their staunch and loudly welcomed support of the prime minister's action at Munich.

In the parliamentary by-elections the party has given support—not always welcomed—to the Labour candidates, despite differences in policy; it has also been given in municipal elections, except where the I.L.P. had nominated its own candidate. The municipal contests in November showed a gain of two seats by the I.L.P.

At the party congress, held at Manchester in April, opposition was expressed to the formation of a Popular Front as a reactionary move; and resolutions were carried condemning the Anglo-Italian agreement, declaring it the duty of the working classes to defend Soviet Russia against imperialist aggression, and favouring co-operation with the Labour Party on agreed issues. (L. H. D.)

INDIA. Surpassing in interest all other Indian topics at the moment is the working of the new constitution which came into effect in April 1937 and gave the people of India, for the first time in their history, the right to govern themselves By the end of 1937 provincial autonomy was in full operation in the eleven major provinces. Legislatures, elected on a franchise which ranged well beyond the limits of literacy, had met , parties had begun to form themselves ; ministries had been called into being, portfolios distributed, and all the paraphernalia of parliamentary and cabinet government set up. The machinery of administration continued to run under its old momentum, while the new motive power of democracy was being adjusted to it. The chief pre-occupation of ministers, apart from and sometimes to the exclusion of learning their new duties, was to deflect the energies of their governments to the tasks to which their pronouncements had pledged them in less responsible days So far as these were concerned with social uplift—education, sanitation, prohibition, and the like—large-scale plans were prepared and considerable beginnings made. Other promises, however, suggesting a millennium for the proletariat, proved less tractable; and the problem of finance for the " nation-building " services has hardly been approached Yet the day-by-day work of the various governments has been carried on without discredit, and the relations between ministers and the permanent officials whom they took over from the old regime have been unexceptionable.

The flame, however, which had raged over India in the nationalist agitation of the previous thirty years was far from extinguished, and the determination of the Congress party to dominate the government was not abated. When 1938 opened, the Ministries in six out of the eleven provinces owed allegiance to the Congress ; in two others, before the year ended, the original coalition ministries had been defeated and replaced by Congress adherents ; and in the remaining provinces the Congress minority in the legislatures formed an unresting opposition. The Congress " high command ", however, was not content with influencing the conduct of government by constitutional means, and showed a tendency to instruct ministers in the exercise of their functions. There were two outstanding instances of such intervention. One occurred in the Central Provinces, where the prime minister, Mr. Khare, was put on his defence for having rearranged his cabinet without permission, and ordered to resign. He obeyed, but there was a general feeling that violence had been done to the spirit of democracy inherent in the constitution.

The other instance of attempted dictatorial methods, and the first approach to an engineered crisis, occurred in Feb. 1938, when ministers in the United Provinces and in Bihar presented a practical ultimatum to their governors for the release of a number of so-called political prisoners. The objects of their proposed clemency were men who had been convicted of crimes of violence ; but at election time Congress candidates had promised an amnesty for whatever had been done in the course of the earlier political agitation. In the two provinces mentioned, the governors refused wholesale release of these malefactors. Ministers thereupon resigned ; Congress stepped in to support them, and ten days of argument and excitement followed. Other provinces, however, did not copy the U.P. or Bihar ; and the governor-general announced that it was he who, in the discharge of his responsibility for the safety of India as a whole, had instructed the governors to act as they did. In the end agreement was reached ; the two governors undertook to examine individual cases of proposed release ; and the ministers resumed their portfolios. The occasion for challenging the " safeguard " powers of governors had been badly chosen, and no one wanted a constitutional breakdown.



P. Popper]
BENARES : GHATS ON THE GANGES

Little is heard of the threat that members of the Congress party were taking ministerial office only in order to wreck the constitution from within. The two key provinces in this respect were the United Provinces and Madras. In the former the ministry is exposed to the influence of Mr. Jawaharlal Nehru, the leader of the separatist wing of the Congress ; in the latter, it is more in sympathy with Mr. Gandhi. In Madras, bold measures of social reform, extending to the former " untouchables ", are being projected by ministers who show a strong sense of independence. In the United Provinces, the extremist movement has had its effect in strikes among the peasantry, which threaten both the peace and the revenues of the province. Promises coming home to roost in this fashion have brought ministers back to a sense of reality, and they have been active in dealing with labour unrest. His experience indeed evoked from the premier of the province, when addressing the Congress assembly at Delhi in September, the declaration that the maintenance of law and order and the security of life and property are synonymous with the preservation of civil liberty.

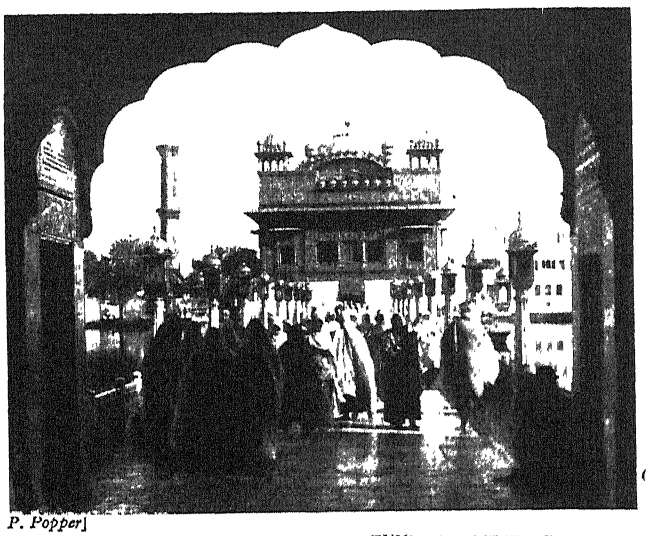
While the new constitution was making on the whole a promising start in the provinces, there was no progress to record in the transformation of the central authority. It is to be a federal government, composed of representatives of the provinces and of the Indian states in carefully defined proportions. It is optional with the princes to come into this arrangement, which does not, however, become operative until the rulers of at least half the total population of the states accept it. The enthusiasm with which the federal idea was acclaimed by many of the leading princes has cooled, for two reasons: on the one hand there is hesitancy in giving up such sovereign rights as a federal system would

necessarily take over; on the other, the princes are growing alarmed at the hostility which the Indian nationalist is showing to their participation in a government to which he will be subject. There is thus a general holding back on the part of the states. Meanwhile a vehement agitation against the scheme is raging in British India. The Congress party threaten to wreck it on the ground that, in what must be a democratic federation, there is no place for autocratic methods, and that, until they have conceded responsible government in their own states, the princes cannot share in an administration designed for free people. A parallel opposition to the scheme is being developed by the Moslems, who fear that the states would bring in a large majority of Hindu interests into the central authority and make the position of their community even less secure than it is now.

While uncertainty as to the future of the federation persists, the central government remains in its anomalous role, with an irresponsible legislature and an executive which is not answerable to it. Friction has of necessity resulted; the outstanding example being when, on a relatively trivial technical issue, the assembly staged a demonstration against the 1938–39 budget which compelled the governor-general to pass it under his reserve power of certification.

Conversations were started in February with the purpose of arranging a joint meeting of the Congress and the Moslem League. They broke down by June, when the Moslem League unfurled its own flag as a rejoinder to the so-called "national" flag of the Congress. Meanwhile, among the populace, communal strife ran as high as ever. Owing to clashes between Hindus and Moslems, a curfew order had to be issued in Allahabad in March and in Bombay in April, and troops had to be called out in Benares and Cawnpore.

Trade. Nineteen thirty-eight was a year of severe recession, the backwash of the American slump aggravating local conditions. Although the wheat crop in the spring was about a million tons better than in the previous year, and although the piece-goods market benefited by Japan's occupation in war, there was a general decline in exports. Jute, sugar, cement all suffered from over-production; cotton prices slumped badly; and, with a falling export of gold, the balance of international payments swung heavily against India. A tariff duty, professedly temporary, had to be imposed upon wheat; the usual outcry was raised for export subsidies; and Congress, perceiving an easy economy, clamoured for the devaluation of the rupee to 1*s.* 4*d.* in place of 1*s.* 6*d.* For over two years, exchange had been steady at 1*s.* 6⅛*d.*, but by June it was down to 1*s.* 5 1/16*d.*, and for a short time it touched the legal minimum. The Reserve Bank, however, was able to prevent a further fall (early in the year it was holding gold and sterling equivalent to 58 per cent of the note issue), and the government flatly refused to interfere with the existing parity. A brighter feature in the year was the improvement in railway returns. For six years since 1930–31 the railways had made no contribution to general revenues; in 1937–38 they showed a surplus of approximately 2¾ crores (just over £2 millions), and for 1938–39 the estimate was almost as favourable, though there now seems to be doubt whether it will be realized. Posts and Telegraphs too came round the corner, having shown in 1937 a real surplus (£109,000) for the first time in ten years. In 1938 the Reserve Bank began the issue of its own notes in substitution for the government currency notes, which had been the only permissible paper money since 1862.



P. Popper]
ENTRANCE TO THE GOLDEN TEMPLE, AMRITSAR

In May the British textile industry sent a delegation to Simla, to negotiate for better treatment of Lancashire by India. A less propitious time could hardly have been chosen, and the conversations completely broke down. No better success attended a visit of the Commerce Member of the central government to the London Board of Trade in September. The Ottawa agreement, which has been carried on provisionally since 1937, will now lapse after the next budget session (spring of 1939), and negotiations for a new trade agreement between India and Great Britain had reached an advanced stage in November.

Finance. The budget for 1938–39 was remarkable. It was balanced at just £64½ millions with no new taxation, although the exchequer was suffering severely in customs and excise. Obligations which had been, or were being, cleared off included £1,880,000 loss of revenue through the separation of Burma, £1,455,000 assignment of income-tax in starting provincial autonomy, and quite £2 millions in two years for military operations in Waziristan. The public debt of India was given as £870 millions, of which only £133½ millions could be described as unproductive (*e.g.* New Delhi) or only partially productive (*e.g.* the port of Vizagapatam). But, though the financial position at present is strong, there are grounds for caution ahead. The central government has still to surrender more revenue to the provinces under the Niemeyer award, and federation is going to be costly; high tariffs are hitting the revenue, especially for sugar and cotton textiles; and the provinces are hastily building up new resources at the expense of the central government, while abandoning revenues of their own.

Defence. The steady demand of the Indian nationalist for a reduction in military charges in order to feed the provinces with money for social services is countered by the imperative need of heavy expenditure to bring the equipment of the army in India up to date. In September large concessions were made; the British exchequer provided £5 millions for re-equipment, and four British battalions were transferred from the Indian to the Imperial establishment. Further inquiry is being made by a committee under Admiral Lord Chatfield into an insoluble problem; and yet the total defence budget for India is only £27 millions. She has ceased her old annual payment of £100,000 for naval defence, but will now maintain six sea-going escort vessels, free to co-operate with the British navy for coast defence, and she will accept responsibility for the local defence of her ports.

General. The visit by the King-Emperor which had been planned for 1938 has been deferred " until the general world outlook has become more settled and the financial prospects more definite ". In January the Indian Science Congress held its jubilee session, jointly with a visit of the British Association The eminent Indian poet, mystic, and philosopher who wrote under the name of Iqbal died in Lahore (aet. 62) in April. In August a new short-wave broadcasting station was opened in Calcutta, being the last of four which are to serve the whole of India. Eight transmitting stations have been opened in as many months by All-India Radio ; and plans are ready for nine medium-wave stations. There are however, although the wireless is very popular in the villages, only 55,000 licences in the whole country In the September crisis, 22 of the leading princes had offered their services and resources to the King-Emperor in the event of war. Speaking generally, Indian sympathies in international affairs are with the Spanish republicans, for the Arabs and partition in Palestine, and against Italy and Japan. The people realize (as they have always had reason to do) that power is necessary, and they show signs of appreciating the peace they have enjoyed through Britain's power. (ME)

Area and Population :

Area 1,575,185 sq. miles, of which the Native States and Agencies total 712,508 sq. miles.
Population (est. Dec. 31, 1936) 358,600,000.
Chief Towns (pop. census 1931) :

Calcutta	1,485,582	Ahmedabad	313,789
Bombay	1,161,383	Bangalore	306,470
Madras	647,230	Lucknow	274,659
Hyderabad	466,894	Amritsar	264,840
Delhi	447,442	Karachi	263,565
Lahore	429,747	Poona	250,187

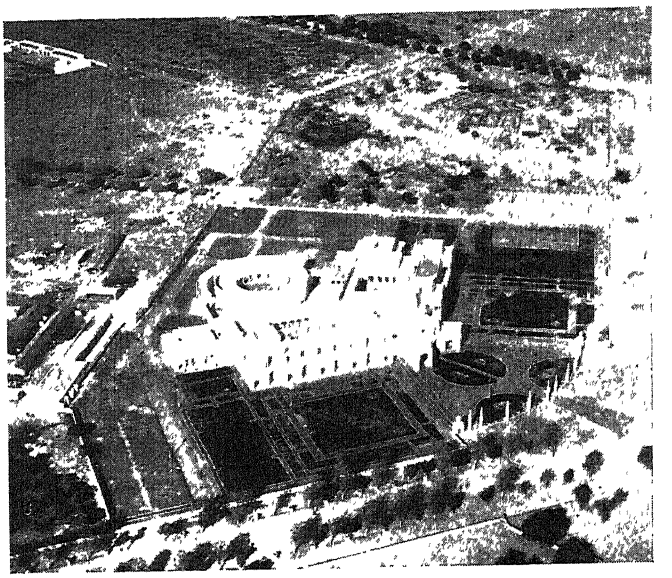
Viceroy. The Marquess of Linlithgow, G.C.S.I.
Languages. Hindi and Bengali the most important.
Religions. Hinduism (approx. two-thirds), Mohammedan (approx one-fifth).

Production :

Wheat	(1937)	9,971,500 metric tons
Barley	(,,)	2,345,000 ,, ,,
Maize	(1935)	2,198,700 ,, ,,
Rice	(1937)	40,495,400 ,, ,,
Cane Sugar	(,,)	3,220,000 ,, ,,
Tobacco	(,,)	543,600 ,, ,,
Tea	(1936)	179,200 ,, ,,
Ground Nuts	(1937)	3,311,600 ,, ,,
Iron Ore	(1936)	1,666,000 ,, ,,
Cotton Seed	(1937)	2,394,000 ,, ,,
Rape Seed	(,,)	991,600 ,, ,,
Sesamun	(,,)	478,600 ,, ,,
Cotton, ginned	(,,)	1,027,500 ,, ,,
Jute	(,,)	1,563,000 ,, ,,
Wool	(1936)	45,000 ,, ,,
Coal	(1937)	22,570,000 ,, ,,
Manganese	(1936)	414,000 ,, ,,
Gold	(1937)	10,268 kilograms
Area planted to Cotton	(1938)	21,492,000 acres
,, ,, ,, ,,	(1937)	20,715,000 acres
,, ,, ,, Ground Nuts	(1938–39)	6,879,000 ,,
,, ,, ,, ,, ,,	(1937–38)	7,014,000 ,,
,, ,, ,, Sesamun	(1938–39)	2,678,000 ,,
,, ,, ,, ,,	(1937–38)	2,759,000 ,,

Production, industrial :

Pig Iron (1937) 1,669,000 metric tons
Steel (,,) 930,000 ,, ,,
Cotton (1936–37) . . Yarn spun 1,054,116,664 lb.
,, ,, . . Woven goods 782,315,881 lb.
,, ,, ... No. of mills 730
,, ,, . . Aver. no. employed 417,276
Jute (1935) : Mills, 100 ; employees, 263,700.
Total number of factories (1936) . . 9,323
Aver. daily no. employed (1936) . . . 1,652,147

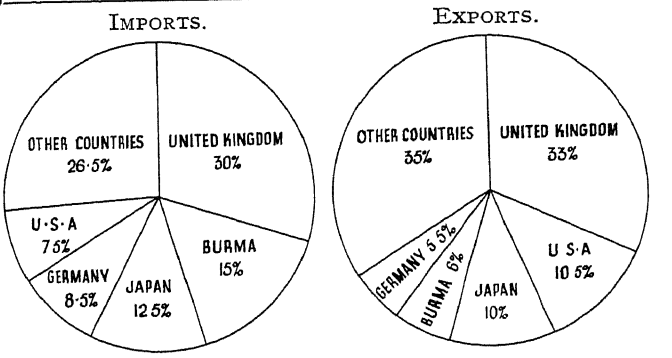


Aerofilms Ltd]
AERIAL VIEW OF THE VICEREGAL LODGE, DELHI

Overseas Trade 1937–38 :

Imports, merchandise . . . Rs 1,73,45,23,684
Exports, mecrhandise . . . Rs 1,80,92,12,176
Re-exports . . . . . Rs. 8,28,12,921
Gold and silver coin and bullion : imports Rs. 1,55,59,858
,, ,, ,, ,, ,, ,, exports Rs. 17,89,23,846
Imports from Afghanistan (1937–38) . Rs. 3,70,61,247
Exports to Afghanistan (,,) . Rs. 60,85,070

	Imports from, 1937–38	*Exports to*, 1937–38
U.K.	Rs. 51,82,36,251	Rs. 59,62,34,671
Burma	Rs 25,90,86,432	Rs. 10,38,98,066
Japan	Rs. 22,22,85,942	Rs. 18,12,58,220
Germany	Rs. 15,31,68,484	Rs. 9,67,02,653
U.S A.	Rs. 12,90,00,281	Rs. 18,24,30,515

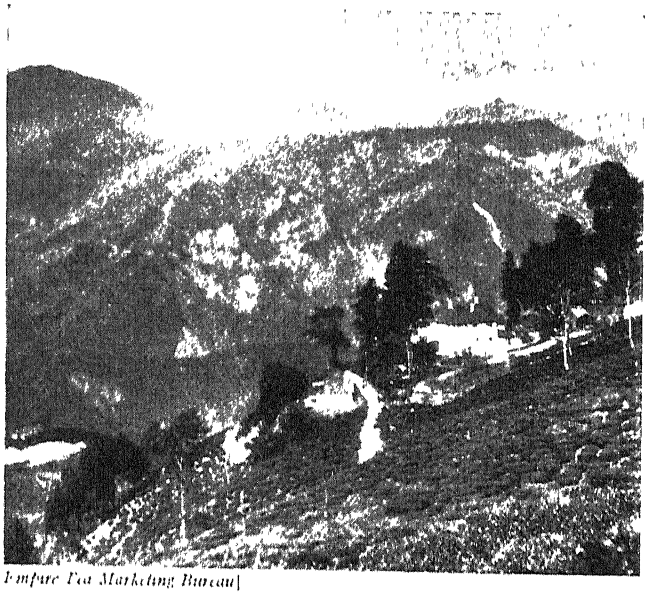


Communications and Transport :

Roads (1937) British India only, 69,000 miles metalled.
,, (,,) ,, ,, ,, 200,000 miles unsurfaced.
Railways (1937) : Mileage open, 43,128, of which 39,000 miles are government owned.
Shipping, tonnage entered (monthly average, 1937) 730,000.
Shipping, tonnage entered (Aug. 1938) 707,000.
Shipping, tonnage cleared (monthly average 1937) 787,000.
Shipping, tonnage cleared (Aug. 1938) 785,000.

Finance and Banking :

Revenue, ordinary (1937–38) . . Rs. 1,18,43,00,000
Expenditure, ,, (,,) . . Rs. 1,22,54,00,000
Revenue, ,, (est. 1938–39) . Rs. 1,18,53,00,000
Expenditure, ,, (,, ,,) . Rs. 1,22,17,00,000
Public Debt (March 31, 1938) domestic Rs. 7,15,44,00,000
,, ,, (,, ,,) external Rs. 4,81,60,00,000



Empire Tea Marketing Bureau]

A DARJEELING TEA PLANTATION, 8,000 FT. ALTITUDE

Notes Issued (Oct. 28, 1938) . . Rs. 2,00,82,46,000
Gold and Sterling Reserve (Oct. 28, 1938) . . . . . Rs. 1,00,57,76,000
Currency . . . Rupee (Rs. 1 1s. 6d. at par)
Average Rate of Exchange (1937) Rs. 1 18·13 pence

Education 1935 36. Recognized institutions in British India:

Primary (males):	Schools,	165,240 ;	Scholars,	7,803,326
,, (females):	,,	32,618 ;	,,	2,505,077
Secondary (males):	,,	12,863 ;	,,	2,082,959
,, (females):	,,	1,365 ;	,,	339,959
Colleges (males) (number)		297 ;	,,	112,434
,, (females)	,,	37 ;	,,	2,790

Universities: British India 15, States 3.

Defence:

Net expenditure estimated (1938-39), Rs. 45,18,00,000.

Army (1938):	British,	3,938	officers ;	51,475	other ranks.	
,, ,, :	Indian,	2,936	,, ;	118,945	,,	,,
Navy ,, :	British,	90	,, ;	50	,,	,,
,, ,, :	Indian,	13	,, ;	1,335	,,	,,
R.A.F. ,, :	British,	259	,, ;	1,916	,,	,,
,, ,, :	Indian,	16	,, ;	226	,,	,,

Miscellaneous:

Motor vehicles licensed (March 31, 1937):
British India: 118,825 cars and taxis, 40,941 commercial vehicles, 11,679 motor-cars.
States: 13,392 cars and taxis, 6,134 commercial vehicles, 1,669 motor-cycles.
Wireless receiving set licences (Jan. 1, 1938), 55,000.
Telephones (March 31, 1937): 71,732 straight-line connexions, 471 exchanges. (W. H. W.)

INDUSTRIAL HYGIENE. During last century interest in industrial hygiene was practically confined to the study and control of certain occupational diseases, and but little consideration was given to the physiological requirements of the worker. Before 1914 some enlightened employers had improved working conditions and shortened hours of labour, but with the stress of the War of 1914–18 came the realization that little was known of the physiological needs of the industrial worker. In Great Britain the Health of Munition Workers' Committee was formed in 1915, and in 1918, after the dissolution of that committee, the Industrial Fatigue Research Board, later known as the Industrial Health Research Board, was constituted to study the relation of methods and conditions of work to functions of the human body. The Board has now been in existence twenty years, and its last annual report[1] contains a valuable and interesting summary of the results achieved. The investigations cover the whole field of industrial hygiene, and deal with hours of labour, environmental conditions, physiological and psychological aspects of methods of work, vocational suitability, and industrial sickness.

In recent years large industrial concerns have done much to protect the health of their employees: many firms in the United States and in Great Britain employ whole-time medical officers. The great majority of factories, however, are small and employ less than a hundred persons, and establishments of this size cannot cope effectively with industrial health problems alone. In both the United States and Great Britain the opinion has been expressed that some further governmental organization, co-operating with employers, employed, and other agencies, is necessary for the prompt and adequate application of hygiene in industry. In the United States rapid strides are being made in this direction, for industrial hygiene services are being set up in many States and in a number of cities.[2] Besides this expansion of administrative activities, teaching and research facilities are increasing as new departments of industrial hygiene are opened in various universities. A valuable innovation in teaching is that in both Great Britain and the United States short intensive courses of instruction in industrial hygiene are given to medical men, engineers, and others concerned with industrial management.

Emphasis has recently been laid on the excessive number of accidents incurred by young workers, both in factories and in mines. In Great Britain it is expected that the operation of the new Factories Act and the regulations made thereunder will reduce these accidents in factories, while mining engineers are studying the factors concerned in the causation of underground accidents.

Much work continues to be devoted to the study of silicosis and its prevention. At a conference recently held under the auspices of the International Labour Office it was recognized that the initial examination of workers entering industries with a silica hazard was justified as a routine procedure, if only to detect tuberculosis and thereby protect the man from an added risk and his fellows from possible infection. During the year a valuable review of the pneumoconioses (pulmonary diseases due to dust) has been issued by the International Labour Office.[3]

See (1) *Eighteenth Annual Report of the Industrial Health Research Board* (London: His Majesty's Stationery Office, 1938); (2) J. J. Bloomfield and M. F. Peyton, *Evaluation of the Industrial Hygiene Problems of a State*, U.S. Public Health Service, Bulletin No. 236 (Washington: 1937); (3) L. Teleky, "Pneumoconiosis (Pulmonary Disease due to Dust)", *Occupation and Health*, Supplement, January 1938 (International Labour Office, Geneva). (T. Be.)

INDUSTRIAL RESEARCH. In many parts of the industrial world, during 1938, scientific investigation continued to make available new and better constructional materials, and the growth and productivity of research on synthetic plastics, textiles, solvents, and lacquers were impressive.

Great Britain. The Sir Robert Hadfield metallurgical laboratories were opened in Sheffield university. The largest glass research department in Great Britain began operation at St. Helens, seeking new methods of processing glass. A large chemical company now has eighteen research stations in operation, or authorized, employing over 1,000 persons. Investigations reported by the Department of Scientific and Industrial Research related to road construction and maintenance, freezing of certain building materials, stresses in reinforced-concrete piles during driving, grading of aggregates and workability of

concrete, deterioration of structures in sea water, welding of steel, kiln-seasoning of teak, moisture in wood, action of hydrogen on coal, and rancidity in edible fats. Studies have brought to light remarkable base- and acid-exchange characteristics, similar to the properties of zeolites, exhibited by certain types of complex formaldehyde condensation products of resinous nature, and in 1938 a commercial water-softener of this type was placed on the market. A protective covering for wooden airscrews, utilizing a special synthetic resin, was announced A novel method for moulding thermo-plastics employs high-frequency alternating current to effect uniform heating, and a procedure has been reported for surface-hardening transparent resins, to render plastic lenses, etc , less scratchable Low-cost brown and black plastics are under development Research brought a new kind of staple fibre claimed to absorb dyes better than others, and laminated fabrics were studied at more length. Experiments are in progress on the compounding of rubber and its derivatives with tar and tar products. Two new ranges of coal-tar dyestuffs for wool and acetate rayon were placed on the market. A synthetic drying oil was introduced, a new fire-resistant finish was announced, and Canadian fish oils have been studied as substitutes for vegetable oils in paint manufacture. Progress was reported in research in the superphosphate industry. The concentration of fruit juices by freezing is receiving wide investigation, as are problems involved in the large-scale storage of grain. Chemical composition of wood smokes and chemical products of mould metabolism are other subjects of experimental work.

Europe. *Netherlands.*—Many technochemical investigations are in progress. The sulphuric acid industry has been enlarged, the quality of dairy products is being constantly studied, and a plastic made from potato flour is under development.

Belgium.—Investigational facilities have been improved and research has been active on viscosity of glass, structure of magnetic steels, metallic carbides, incandescent filaments, and copal.

France.—Several manufacturers have been studying the production of sulphuric acid from gypsum ; also research has been alive in the nitric acid and nitrogenous fertilizer fields. The manufacture of fatty alcohols by a new procedure, and the production of synthetic camphor by the Schering process were conspicuous among the chemical accomplishments.

Denmark, Sweden, and Norway.—New uses are being sought for whey by Danish chemists. Saponified tall oil has been applied as a flotation agent for concentrating lime-bearing materials in the portland cement industry of Denmark. A process was reported in Sweden for manufacturing building materials from blast-furnace slag and bituminous shale ashes. Anti-gas protective clothing is being made in Sweden from a material of the viscose type. A Norwegian engineer has devised a new procedure for road concreting based on " activation " of the concrete beyond its normal wetting time and the use of such a low water-cement ratio that the concrete can be compressed strongly with machines.

Germany.—The Kaiser-Wilhelm-Gesellschaft für Forderung der Wissenschaften maintains 36 research organizations. The Kaiser-Wilhelm Institut für Kohlenforschung is studying hydrocarbon synthesis by the Fischer-Tropsch process, and a contact mass has been developed that is cheaper than the usual cobalt-thorium catalyst, but still gives equal yields. In addition, the synthesis has been controlled so that a large part of the total production is obtained as solid paraffin. The Kaiser-Wilhelm Institut für Silicatforschung is engaged in large-scale experiments involving practical comparisons of typical highway cements. Several companies are sustaining research on aluminium alloys Local sources of alumina are under investigation, and an experimental plant at Lippe is using domestic clay. A new process is said to enable the recovery of vanadium from the iron ores of southern Germany.

The water-power resources of Austria have led to plans for its electrochemical development. The Nazi policy of self-sufficiency has caused a considerable replacement of certain metals by plastics. A similar trend is the stimulation of substitute materials for those building goods formerly made partly or entirely from imported raw materials. It is asserted that Germany now supplies, largely through research results, about three-fourths of its sulphur requirements. The treatment of brown coal with hydrochloric acid to reduce the ash content is receiving experimentation, and the conversion of solid fuel into gas by reacting with oxygen under increased pressure has been investigated. A plant was built for purifying air-contaminated helium. The cultivation of aromatic and medicinal plants has been receiving scientific aid. Research on plastics is brisk, standardization of synthetic resins is being attempted, but most of the moulding resin production consists of phenoplastics. A proposed method for keeping bread and pastry fresh by the use of " dry ice " is said to be under research. Good preservation is, in fact, being studied widely, and hence there is much activity in refrigeration.

Czechoslovakia.—Extensive research on the preparation of vanadic acid was described. New glass products were introduced ; artificial rubber received further development.

Italy.—The Institute of Ceramics was busy directing research to replace useful raw materials now imported with domestic materials. The commercial development of Sicilian asphaltic shale was realized and the National Research Council carried on an extensive investigational programme on motor fuels ; it is the aim to surpass in production the Italian liquid fuel requirements of 2,500,000 tons per year. The Italian textile industry shows a decided " autarchic " tendency, for the country is relatively poor in raw material and seeks to make itself as independent as possible. The " Lanital " (casein fibre) process has been licensed in eleven countries. Much research is in progress in the dye, paint, varnish, pharmaceutical, and photographic industries. The production of solvents is increasing.

Hungary.—Several researches have related to methods for working up titanium ores. The production of rare gases, the investigation of the therapeutic value of the thermal waters of Budapest, and the evaluation of fireproofing agents for wood have been other scientific projects. Agricultural researches have been numerous.

Poland is building up an armament industry in the Carpathian region, for which new chemical supplies will be needed. Synthetic rubber is in production at Dembica ; the paint and varnish industry is expanding. Chemistry is therefore being encouraged.

Soviet Union.—The chemical industry of the U.S.S.R. is receiving the advantages of widened research facilities, especially in the fields of essential oils, tartaric and lactic acids, food products, and paints. Co-ordination between chemical works and related institutional research has been

improved. The perfume laboratory in Moscow has been concentrating on synthetic vanillin; the industrial gas industry has been doing research in the production of oxygen and of krypton-xenon mixtures; and a project for the manufacture of pulp from straw is being developed.

British Empire. *Canada* produced about seventy grams of radium in 1938, compared with 23·75 grams in 1937. Researches were conducted on the recovery of sulphur from smelter fumes and of sodium sulphate from salt-lake water, and on the manufacture of ammonium phosphate fertilizers, acetylene products, and pulp and paper. Much investigational work has been carried out on the chemical seasoning of wood, wood preservatives, and fire-retardants, wood saccharification, and wood glues. Problems of road building materials and road construction have received specialized attention. The National Research Council has reported progress in studies on corrosion, bleaching, seed disinfection, casein, and storage and transport of foods.

India. Glass, phenoplastics, vegetable and essential oils, soaps, starches, cane sugar, jute, papermaking, and tanning are receiving investigational attention. Additional work on the basic chemistry of lac has been described and the Alipore Test House of the government is focusing on paint researches.

Australia.—The Council for Scientific and Industrial Research made progress reports on investigations pertaining to plants, insect control, noxious weeds, soils, irrigation, forest products, nutrition, food preservation, beef preparation, and fish.

United States. About $180 millions was expended for industrial and engineering research of all kinds. Four regional research laboratories were authorized by the Agricultural Adjustment Act of 1938. There was much expansion in pharmaceutical research facilities. Heat-resistant transparent sheet was produced from bentonite. The U.S. Bureau of Mines resurveyed the nation's resources of low-grade lithium ores, and developed a method of concentrating and extracting lithium compounds from spodumene; it continued research on fixation of sulphur from smelter smoke and on catalytic hydrogenation of pyrolytic tars. A high-speed process for electroplating copper was described. Improvements have been made in mercury vapour lamps, also in lamp diffusers by utilization of fluorescing glasses to increase the efficiency of illumination. Calcium metaphosphate is under investigation as a fertilizer. Much research was done in the field of water treatment. Many uses have been found for fibre glass. Progress has been accomplished in working out practical building codes, describing minimum requirements, for general adoption. The whole petroleum industry is interested in the architecture of gasoline molecules, and a great deal of effort has been made to shape them into structures inherent in non-knocking fuels. Diesel-powered trucks and buses were introduced. New ingredients for hydraulic brake fluids and a number of other novel organic compounds were marketed. Advances were made in hydroponic research. The large forest reserves of southern pine available for the manufacture of both kraft and newsprint have led, especially through the research activities of C. H. Herty, to the construction of many new paper mills in the south. The production capacity of the American rayon industry has reached the potential of over 400,000,000 lb. annually in less than thirty years. A process was evolved for manufacturing a synthetic fibre from casein that is said to use more grades of the latter than any heretofore developed. Ammonium sulphamate showed promise as a flameproofing agent. Progress was reported in colour photography and high-speed photography; cellulose acetopropionate was applied in film production. A prominent event of the year was the announcement of a new type of resin called "Exton", which is being produced in filaments for use as a successor for pig bristles in toothbrushes. This type of resin will soon make its commercial appearance as artificial silk ("Nylon"). "Exton" belongs to the family of polyamides derived from polybasic acids and polyamines. Promising results in the production of artificial fibres from other types of synthetic and semi-synthetic resins have been world wide. The development of "Vinyon", from polyvinyl resins, to the point where commercialization in 1939 is predicted, is an achievement in this category. Purified fatty acids were produced from vegetable and fish oils by a novel distillation process. Progress was noted in the molecular distillation of fish liver and soya bean oils. Research continues on imparting satisfactory drying properties to soya bean and cottonseed oils. Forward steps were made in polystyrene and lignin plastic technology. The U.S. Bureau of Public Roads installed over 200 reflectors of "Lucite", to determine their effectiveness after dark in hazardous locations such as curves. Investigation of the uses of large, moulded, and laminated parts in automobile, aeroplane, and railroad coach construction has been going on. Important professional organizations are laying down standard testing methods and standardized classification for moulded and laminated plastics. Much attention has been directed to the development of plastics and lacquer base resins from natural protein sources, such as corn and soya bean, and from mannitol and sorbitol. Alkacrylic ester polymers have found wider use in plastics and coatings. Continued expansion in the development of lacquers based upon urea-formaldehyde resins combined with alkyds has been reflected in new products. Researches on the chemical nature of shellac were extended.

Brazil. The Brazilian government has been encouraging the study of phosphate deposits, especially apatite, being desirous of creating a fertilizer industry. The minister of agriculture has taken steps to aid in the search for petroleum, to improve the quality of cotton, to assist the manufacture of timber products and palm oils, and to increase the production of cassava.

Japan. Activated carbon, solvents, phthalic acid, dyestuffs, and plastics have been well studied. Artificial bristles are being produced by treating viscose threads with uric acid and by filling a tubular viscose thread with a stiffening agent. A process for preparing fibres from proteins of soya bean cake has been industrialized. (W. A. Ha.)

INFANTILE PARALYSIS: *see* INFECTIOUS DISEASES, ACUTE: § *Acute Poliomyelitis.*

INFANT MORTALITY: *see* VITAL STATISTICS.

INFECTIOUS DISEASES, ACUTE. No entirely new advances or discoveries in the diagnosis and treatment of the acute infectious diseases can be recorded for 1938, but there were notable developments in the technique of specific tests and in their interpretation. Likewise in the domain of therapeutics no new remedies of proved value have emerged, but the scope and limitations of certain recently discovered drugs were assessed with increasing accuracy.

Enteric Fever. Hardly had the Croydon epidemic of 1937 subsided when a series of smaller outbreaks appeared to shatter an already shaken public confidence, the chief of these being the Hawick and Shoreditch outbreaks, both due to the contamination of foodstuffs by carriers engaged in

their preparation or manipulation. The last week of the year was marked by the commencement of another outbreak in London, which proved to be of considerable magnitude and severity.

With the ordinary Widal test, positive reactions with low dilutions, such as 1 10, suggest the desirability of repeated examination of excreta, provided there is a negative history as regards previous attack or inoculation.

Although no new principle is involved, a modification of the test, incorporating *Vi* substance in the preparation of the antigen, in the detection of carriers as well as of early cases, has proved to have a wider application.

The therapeutic benefits of administration of immune typhoid fever serum as prepared by Felix at the Lister Institute, described by McSweeney in 1935, were not obtained in the Croydon cases in which the measure was employed (Willcox, 1938). More recently this serum has had a further trial in some of the fever hospitals in London, with somewhat disappointing results.

Opinion remains divided on the vexed question whether active immunization should be adopted as a routine measure for those exposed to risk in an outbreak. In the majority of outbreaks it is found to be superfluous, as the source of infection is usually detected and eradicated almost immediately the disease is recognized in the community. If the source is not identified and cases continue to appear, inoculation of those specially at risk, that is, of close contacts or those known to have ingested contaminated articles, is a sound procedure, despite the possibility, remote but definite, that certain individuals may thereby be rendered more prone to attack during the period of lowered resistance which may follow inoculation. In like manner, an injection given in the early stages of an unrecognized attack may exert an untoward effect on the subsequent course of the disease (Topley). Passive immunity of brief duration, fourteen to twenty-one days, may be conferred on individuals, or small groups of individuals, intimately exposed, as was done, apparently with complete success, by Fenton and Hay in a localized outbreak in Kensington early in the year. More experiments in passive immunization are required before the value of the measure can be adequately assessed.

Measles. Prontosil and allied preparations, in which sulphanilamide is the active substance, have been extensively employed in the treatment of measles, both for the prevention of complications and for the cure of pneumonia, otitis media, and other septic complications due to invasion by hæmolytic streptococci In the most recent contribution to the subject (Thompson and Greenfield) are detailed the findings in a carefully controlled series so treated at the end of 1937 and the first five months of 1938; although the treated cases fared better than the controls, no decisive verdict was found possible in view of the mild character of the disease in the last measles epidemic in London.

Immune measles serum (convalescent and normal adult) and placental extracts continued to be used for prevention and mitigation of attack, generally with good effect, but the high claims made by American workers, notably McKhann (1937), have not been substantiated in Great Britain (Gunn; Crosbie; Parish; Hobson, 1938). As serum tends to lose potency with age it has been found advisable to dry accumulated stocks to powder form, in which state its protective properties are retained unimpaired (L.C.C. Measles Report).

Whooping Cough. Although no advances in diagnostic technique can be reported during the year, increasing use has been made of the cough-plate method in establishing early diagnosis, in infants and young children a laryngeal swab has been found by some workers to be a more convenient method of obtaining a specimen

Another remedy was added to the large number advocated at one time or another in the treatment of whooping-cough In view of the experimental evidence that vitamin C or ascorbic acid possesses anti-infective properties, this substance was employed in several series of whooping-cough cases with a view to curtailing the course of the disease and mitigating its severity. In the latest study (Gairdner, 1938) it was clearly shown that vitamin C had no effect on the disease in the children so treated compared with a similar group to which the substance was not given.

Acute Poliomyelitis. The poliomyelitis epidemic, which commenced early in July and only abated at the close of the year, was the largest encountered in England and Wales in recent years The supply of machines providing artificial means of respiration (Drinker respirator or so-called "iron lung", and Bragg-Paul pulsator) was severely taxed during the height of the epidemic. A simplified Drinker was devised by the medical and engineering staff of the L.C.C. and put in production by Both, and Lord Nuffield offered to manufacture 5,000 of these machines for distribution throughout the empire. An even simpler apparatus, in the form of a rigid metal jacket or cuirass, was invented by Burstall of Melbourne; it is cheap to produce and can be used with a Drinker power unit or similar motor, either singly or several per unit, depending on its power. Moreover, it affords easy access to the patient for the application of splints and nursing attention generally

Following the claims of Sister Kenny of Australia (Mills, 1938) that superior results were obtainable with her system of treatment of paralysis, the L.C.C. placed at her disposal facilities for giving it a trial at Queen Mary's Hospital for Children, Carshalton. The essential departures from orthodox practice were that splints are dispensed with, and massage and passive movements are begun early, supplemented by hydrotherapy, graduated exercises, and re-education. The panel of orthopædic consultants who supervised the experiment reported that although the method had certain advantages, it showed no better results than were obtained with accepted measures (L.C.C. special report, 1938).

Cerebrospinal Fever. The tendency in recent years has been to administer therapeutic serum by the intravenous route, in addition to, or in place of, the more usual intrathecal route. The favourable results reported by some enthusiastic advocates may have been due to a lucky chance, especially in view of the findings of Burtenshaw that only a small fraction of serum introduced into the blood-stream reaches the sub-arachnoid space, where the causative organism multiplies and produces its effects. Recently the respective merits of serum and sulphanilamide, singly and in combination, have been compared (Banks; Crawford and Fleming, 1938). The best results appear to be obtained when serum is given by both intravenous and intrathecal routes for two or three days while sulphanilamide is pushed to the safe limit for two days, and the concentration of drug maintained for seven to ten days by a reduced dosage in order to avert the tendency to relapses.

Scarlet and Allied Infections. The discovery in 1924 of the causative agent of scarlet fever, with subsequent preparation of therapeutic serum and toxin or toxoid for active immunization, has not led to an appreciable reduction in

morbidity or in the frequency of complications. Serum causes rapid abolition of toxæmia and disappearance of the rash but does not appear to have any effect on the invasive and pyogenic properties of the haemolytic streptococcus. Some workers (Sako and colleagues; Anderson, 1938) have found favourable results with sulphanilamide not only in the prevention of complications but in the cure of established invasions with a bad prognosis, such as meningitis of otitic origin, while others have reported indifferent or negative results. Probably the best action is obtained by combining both forms of therapy, serum and sulphanilamide, continuing the latter for 21 days until all danger of complications has passed. In their recent book (1938) G. F. and G. H. Dick state: "In our experience sulphanilamide has not been of value in the toxic stage of scarlet fever but seems to be of benefit in the sinusitis, otitis media, mastoiditis, and cervical adenitis after the toxic stage has passed".

Erysipelas. Sulphanilamide has been observed by the great majority of workers to have a decisive therapeutic action on erysipelas by rapidly abolishing toxæmia and producing early resolution of the cutaneous lesion. Should the drug be suspended too early, relapses are not infrequent, and it is now current practice to continue administration of the drug for 10–14 days after cure has been effected, judging from clinical appearances.

BIBLIOGRAPHY. G. F. and G. H. Dick, *Scarlet Fever*, Chicago, 1938; L.C.C. Reports (1938) on the *Measles Epidemic, 1935–36*, and on *Sister Kenny's Method in Infantile Paralysis*; see also *The Lancet*, 2, 7; 1, 987; 1, 1005; 2, 991; 1, 181; *Brit. Med. Jour.*, 2, 1513; 1, 1003; 1, 1091; 1, 1090; 2, 742; 2, 171; 1, 168; 2, 65; 1, 1085; *Glasgow Med Jour.*, Feb. 1; *Proc. Roy. Soc. Med.*, 28, 835; *Univ. Hosp. Bull.*, Ann Arbor, Mich., 4, 12; *New England Jour. Med.*, 216, 450; *Jour. Amer. Med. Ass.*, 3, 995; *Jour. Hyg.*, Camb., 38, 104. (W. G.)

INNS: *see* HOTELS, RESTAURANTS, AND INNS.

INÖNÜ, ISMET (1884–), President of Turkey, was born in Izmir (Smyrna), and, as related in the *Ency. Brit.*, vol. 12, p. 717, for many years distinguished himself as a soldier before he proved himself to be a statesman of the highest order by his conduct of the negotiations which led to his signing of the Treaty of Lausanne in 1928.

From Oct. 29, 1923, until his resignation owing to ill health on Sept. 27, 1937 (with the exception of three months at the beginning of 1925), he was prime minister of Turkey, and as such was an able seconder of the many reforms inaugurated by his life-long friend and predecessor, Atatürk (*q.v.*), particularly in connexion with the opening up of Asia Minor by road and railway. In 1934, Ismet Pasha, as he was then known, adopted his present name in commemoration of his victory over the Greeks near the town of Inönü in 1922. On the death of Kamâl Atatürk he was unanimously elected president (Nov. 11, 1938) by the 348 deputies, and on Dec. 27 was elected to the leadership for life of Turkey's sole political organization, the Republican People's Party.

INSANITY: *see* MENTAL DISEASES.

INSECT PESTS: *see* ENTOMOLOGY.

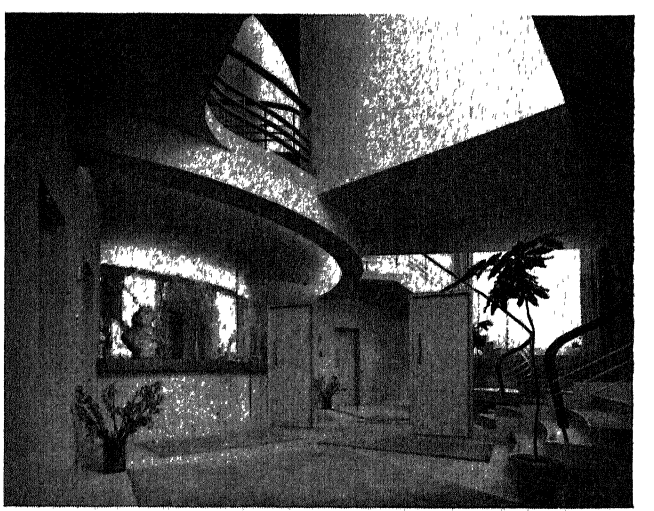
INSULL, SAMUEL, Anglo-American business executive, was born in London on Nov. 11, 1859, and died in Paris on July 16, 1938. In 1881 he went to the United States of America as Thomas Alva Edison's secretary, and in the course of time acquired administrative control of Edison's various companies. In 1892 Insull resigned from the General Electric Company (an amalgamation of the Edison companies), and became president of the Chicago Edison Company and the Commonwealth Electric Company. From 1907 to 1930 he was president of the Commonwealth Edison Company. In 1932, following the business slump of 1930–31, Insull resigned and came to Europe. Blamed for the financial losses of many of the shareholders in his companies, Insull was brought to trial in October 1934, and was eventually acquitted in June 1935.

He married Margaret A. Bird of New York City in 1899, and had one son.

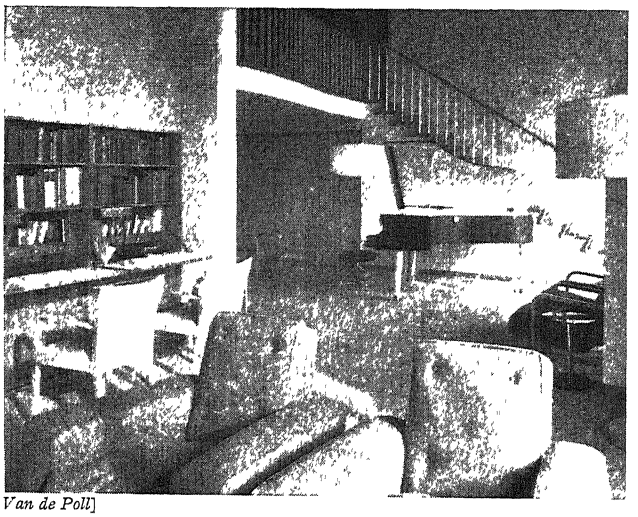
INSURANCE. This subject is dealt with in the following articles (*q.v.*): ACCIDENT AND MISCELLANEOUS INSURANCE; FIRE INSURANCE; LIFE INSURANCE; and MARINE INSURANCE.

INTERIOR DECORATION. There was in 1938 no event of artistic importance comparable with the Paris International Exhibition of 1937. But in Paris subsequent developments in decoration were clearly predicted. As during previous years, a salutary stimulus was provided by Scandinavian countries. Otherwise well-recognized influences were at work on furniture and interior design: comfort, economy of space and material, simplicity—tempered with occasional fashionable digressions, such as the Baroque, Empire, and even Victorian, vogues in both dress and furnishings. There was a renewed appreciation everywhere of the significance of interior design, form, and colour by contrast with mere embellishment, and this, in no small part, was due to the improved standard of design for machine production bringing good mass products within the reach of everyone.

Interior decoration had benefited from the continued improvement in methods of manufacture, and consequently there was greater emphasis on high finishes and exact workmanship. This was particularly noticeable in the use of a material such as glass which, in the form of coloured rolled opal, was finding increased use everywhere. Toughened glass also made its début in the home for shelves, fire-screens, even balustrades. And sheet plastics, blisterproof or otherwise; ply-woods and laminated boards; wallboards of innumerable varieties; plasterboards; cork tiling and magnesite compositions; these and many other contemporary materials contributed to the character of the interior of 1938, and particularly to its sharp, hygienic finish. The possibilities of colour finishes were increased by ingenious variants of spray-painting and



H. Felton]
ENTRANCE HALL OF A REINFORCED-CONCRETE HOUSE DESIGNED BY RAYMOND MCGRATH



Van de Poll]
LIVING-ROOM OF A LONDON FLAT DESIGNED BY SERGE CHERMAYEFF

new processes for metals, such as anodizing. And side by side with this emphasis on high finish was a return to natural, more sympathetic materials—plain wood, rough stone, furs, and wool homespuns.

Equipment and services had much to do with the general tendency to simplification. In the bathroom we had the one-piece cast bath requiring no additional side panel; in the kitchen, pressed-steel cellulosed fitments of standardized design. Methods of ventilation and heating and of air-conditioning (the combination of both) made great strides. Panel heating, by means of flush metal radiators or pipes embedded in ceiling or floor, began to oust the free-standing radiator. Electric convection heaters of good design were introduced. There was a great improvement in lighting fittings and in electrical accessories, such as switches and plugs. There was more understanding and less waste of indirect light.

Furniture design continued to be motivated by the methods of the machine. Excellent standard pieces were produced in plywood, bentwood, and aluminium, and there was an increasing application of moulded plastics. New methods of upholstery made their appearance, as, for example, the use of moulded sponge rubber. The unit furniture idea had come to stay, and built-in fitments almost replaced the traditional roving wardrobe. In furnishing fabrics and wallpapers there was an astonishing improvement in taste. A Baroque freedom relieved the old geometrical designs. Draperies were made of artificial silks. Quilting and chaste frills had a new lease of life. Chairs were covered with washable leathers, which were also used for wall-panelling. The venetian blind returned in an improved form.

There was a greater appreciation of fresh, bright colour in the interior scene. The all-white room came and went, but left an appreciation of the value of whites in the decorative scheme. Modern painting, which had outstripped architectural decoration, began to be a strong influence in the interior. Colour schemes of rooms were built up around suitable pictures. Side by side with increased appreciation of applied colour was an appreciation of the tones of natural materials. Areas of plain brick, stone, and wood gave character to the living-room. There was a half-hearted revival of mural painting and an enthusiasm for photo-murals. The best of the ceramics, glass, and silver was very good, and objects of a high standard of design were within the reach of everyone. Flowers and plants had become a much more conscious element in the internal scheme, and the winter-garden was revived in new and elegant forms.

These are a few of the tendencies which were to be noted in the interior decoration of 1938. No definite style had emerged; in fact, it seems unlikely that there will be any stylistic stultification in this generation We draw freely on all periods of the past for our inspiration, but understand that it is the appreciation of proportion and colour harmonies which matters most, so that in the extreme an interior made out of a collection of soap boxes and a few pounds of paint may be as satisfying as one made with fine furniture and expert finishes. (R. McG.)

INTERNATIONAL ARBITRATION: *see* PERMANENT COURT OF INTERNATIONAL JUSTICE, THE.

INTERNATIONAL LABOUR OFFICE. In 1938 the I.L.O. represented sixty States, or possibly sixty-one, the position of Paraguay being doubtful. Austria's membership lapsed on its incorporation in Germany; and Italy had given notice of withdrawal, which cannot take final effect until 1939, though Italy is in fact taking no part in the work of the I.L.O. Membership includes all other leading countries except Germany. Japan remains a member; and the U.S.A. and the U.S.S.R. are both members, as well as Great Britain and France. Canada, South Africa, Australia, New Zealand, Ireland, and India are all represented, and the British delegation represents the colonial empire. Counting Italy and Paraguay, the I.L.O. represents 26 States in Europe, 21 in America, 8 in Asia, 4 in Africa, and 2 in Oceania. Ethiopia remains formally a member.

During the year 1937–38 there were 43 ratifications of conventions, as against fifty in 1936–37. Mexico ratified fourteen conventions, France and Norway five each, and Belgium four. In March 1938, just after the end of the I.L.O. year, New Zealand ratified no less than 22 conventions. Enough ratifications were secured of three conventions previously inoperative to bring them into force: these were the unemployment convention of 1934, and two conventions of 1935 dealing with hours in glass bottle works and migrants' pension rights. It was reported that there had been an improvement in the degree of enforcement of conventions ratified, except in a small number of States. Up to March 1938 total ratifications numbered 782. The total of conventions adopted is 63.

The 1938 conference of the I.L.O. adopted an important convention designed to improve the collection and comparability of labour statistics in the various countries. It also adopted numerous resolutions and elected to convene in 1939 a second regional conference representing the American States. The work of the conferences held in 1937 and 1938 has been largely concerned with the application of a shorter working week to particular occupations, and with the question of holidays with pay.

The new governing body elected in 1937, to serve for three years, contains representatives of the eight States "of chief industrial importance" (U.S.A., Canada, France, Great Britain, India, Italy, Japan, U.S.S.R.) and of eight other States (Brazil, Chile, China, Mexico, Norway, Poland, Spain, Yugoslavia). The employers' representatives are drawn from Yugoslavia, India, Great Britain, S. Africa, U.S.A., France, Denmark, and Belgium; and the workers' representatives from Sweden, Spain, Great Britain, India, France, Belgium, U.S.A., and Japan. Other countries are represented by substitute delegates.

Fifty countries were actually represented at the 1938 conference of the I.L.O. Most of the attention of the conference was given to preliminary discussions on matters which are to be dealt with further at the conference of 1939. These include international regulations dealing with vocational training and apprenticeship, regulation of the terms of employment in colonial territories, the treatment of migratory labourers, and the questions of hours of work in road transport, and of the generalization of a shorter working week. This last was the most important matter before the conference; attempts to secure international agreement to reduce hours, industry by industry, have failed to yield any substantial results. In face of opposition from the employers' delegates, it was decided to place the matter for decision before the 1939 conference, in the form of separate draft conventions dealing with (*a*) industry and commerce, (*b*) coal mines, and (*c*) transport, with the possibility that more than one convention might be needed for (*a*) and (*c*). The majority of the employers' delegates were also opposed to most of the other recommendations approved by the conference; but it was decided to place all the questions mentioned on the 1939 agenda.

In 1938 Mr. Harold Butler resigned from his office as Director of the I.L.O., in order to become the first Warden of Nuffield College, Oxford. He is succeeded by Mr. J. G. Winant (U.S.A.), with Mr. J. G. Phelan (Ireland) as Deputy-Director. (G. D. H. C.)

INTERNATIONAL LAW. The civil war in Spain, the war in China, and other conflicts brought in 1938 to the courts of other countries interesting cases which have required the application of principles and rules of international law. The growing tensions in Europe have caused an effort of several countries to reassert their traditional neutrality, jeopardized by the principles of joint coercive action contemplated under the League Covenant. The Mexican expropriations raised important questions. Finally, the Pan-American Conference in December made some contribution to the development of international law in the Americas.

Some of the important cases arising out of the Spanish civil war arose in Great Britain. The decree of the Spanish Republican government of June 28, 1937, requisitioning for use Spanish ships wherever they were, brought about litigation in respect of ships located in British harbours, between the original owners and the Spanish government or between the Republican and Franco governments under competing requisitions, especially of ships registered in Bilbao and other ports under the control of Franco. As to ships in the physical possession of agents of the Republican government, the British House of Lords in a test case involving 58 similar ships denied their jurisdiction of a claim by the original owner to restoration of the ship, on the ground that the Spanish government could not be impleaded as a defendant in a British court: (*The Cristina*, 60 Lloyd's List L.R. 147). A more direct recognition of the validity of the Spanish requisition, as in keeping with the French rules of 1914, was extended by the Court of Appeal of Bordeaux: (*Aff. Lafuente et État Espagnole* v. *De Llaguno*, 3 *Rev. Fran. du Droit des Gens*, 358). It was suggested in *The Cristina* that the mere *claim* of "possession" or right to possession by the government would have this result, a conclusion which is criticized by Dr. Thomas Baty: (*Jour. of Int. Law*, Tokyo, Nov. 1938). Even where the Franco government had requisitioned the ship in fact, notwithstanding a prior paper requisition by the Republican government, the British House of Lords gave immunity from the jurisdiction to Franco, on the ground that his was a *de facto* government in control of the greater part of Spain and entitled to sovereign immunities in British courts: (*The Arantzaza Mendi*, 54 T.L.R. 981). It seems strange that this British admission should not have sufficed to grant Franco belligerent privileges, which is not a question of favour but of right, when the appropriate conditions are present. Where the two governments' competing requisitions of the same ship came before the British courts, they refused to take jurisdiction of the defendant government if in actual possession: (*The Arraiz*, 61 Lloyd's List L.R. 39; *El Neptuno*, 62 *ibid* 7). Thus, the rule of sovereign immunity has served to give effect to extraterritorial requisitions which the government was able to execute by taking physical possession. *Cf. The Navemar*, 303 U.S. 68, 58 S. Ct. 432 (1938), 24 F. Supp. 495 (1938). Possibly the Franco government may, if it becomes the sole government of Spain, contest diplomatically the inaction of foreign governments which thus deprived Spanish owners of their vessels.

In other cases the British courts recognized as binding in Britain the law and authority of the government of the place in Spain where the transaction occurred. Thus, in several cases old directors of a corporation domiciled in Franco territory competed with new directors appointed by or acting under authority of the Republican government. The Franco decrees were recognized in British courts: (*Banco de Bilbao* v. *Rey*, 54 T.L.R. 603). In an action by the Spanish government for breach of a charter party to carry coal to Barcelona, the trial court held that the purported blockade by Franco was not an actual blockade so as to excuse the shipowner from delivering his ship: (*The Government of Spain* v. *North of England Steamship Company*, 61 Lloyd's List L.R. 44 (K.B.)). The failure of Britain to grant Franco belligerent rights was considered to disable him from effecting a lawful blockade, even if it had been, as it was not, actual and effective: (*W. J. Tatem, Ltd.* v. *Gamboa* (1938, K.B.) 3 All Emp. R. 135).

The fact that Japan had not declared war on China appeared to trouble courts and Foreign Offices, who seemed uncertain whether a state of war existed. This is an incident of the new and cloudy conceptions of post-1914 Europe. War is a fact. It never needed formal declaration and what the parties called it mattered little. For that reason, under its terms, the Neutrality Act of 1937 should have been invoked by President Roosevelt. A British court correctly held in a case where war alone warranted cancellation of a charter party that war in fact existed: (*Kawasaki Kissen K.K.* v. *Bantham Steamship Co.*, 61 Lloyd's List L.R. 131).

In the Gibbon case, Japan arrested an American citizen on a British ship while on his way from China, where he had served against Japan in the Chinese aviation service, to New York. This raised an interesting question of the power of Japan to punish a neutral citizen for having enlisted in the ranks of Japan's enemies and injuring Japan, a power which possibly Japanese law could confer without violating international law. Had he been shot down in combat and remained alive, the Hague Convention, Article 17, would have required treatment as a prisoner of war, as if he were a Chinese. The issue was not brought to the test because Japan, at American request, released Gibbon: (1938) 32 A.J.I.L. 535–538.

Neutrality. The growing tensions in Europe in 1938 persuaded the traditional northern neutrals to agree to

offset by American imports from the Crown Colonies. This is shown in the following table giving the positions in 1936:

	United Kingdom		United States	
	Imports from	Exports to	Imports from	Exports to
	£ millions			
United Kingdom			37	93
United States	93	37		
Canada and Newfoundland	77	25	77	79
Remaining Dominions	105	150	20	33
Crown Colonies	60	53	45	10

On balance, the United States sold a net £56 millions of goods to the United Kingdom and bought a net £35 millions from the Crown Colonies.

Nevertheless it was essential for this fact to be recognized, and also for the agreement to embody a wide range of substantial tariff concessions. Both these objects have been achieved. The agreement also necessitated certain modifications of the Ottawa agreements signed in 1932 between the various members of the British Empire. This has also been done. Thus certain British concessions to the United States affected the Canadian producer and exporter to Great Britain. In return, the British government consented to the modification of certain Canadian preferences upon imports from Great Britain. This enabled the Canadian government to conclude a better treaty with the United States. Similarly, the main Anglo-American agreement embodied American concessions to the Crown Colonies. So far as Anglo-American direct trade is concerned, the concessions cover £26·5 millions out of the £110·0 millions of British exports to the United States, and £60·8 millions out of the £93·2 millions of goods coming in the contrary direction. The concessions take the form either of actual reductions in duties or of undertakings not to impose or increase duties.

While the Anglo-American agreement holds out a distinct promise for the future in the field of trade conducted under conditions of free economy, the totalitarian countries have not been idle. The frontier readjustments and other political changes in Central Europe naturally affected international trade, for the industries of Austria and the Sudetenland now lie within Germany. Germany has also attempted to tighten her commercial relations with the whole of Central and South-Eastern Europe, and to do so has employed all the familiar methods of totalitarian economics, including subsidies, exchange clearings, the bulk purchase of crops and other staple commodities, the extension of new credits, and the intensification of direct relations between German industries and complementary industries in contiguous countries. The intensification of German rearmament and the economic efforts necessitated by the *Anschluss* and by the occupation of the Sudetenland increased Germany's needs for imports of food and raw materials, and so the whole *tempo* of her external trade programme had to be stepped up. This explains Dr. Funk's tour in South-Eastern Europe. It is doubtful if it has yielded all the fruit which Germany desired, and so next year may witness fresh efforts in other parts of the world. Meanwhile, Germany is creating in Central and South-Eastern Europe something resembling a "Reichsmark area". She also continues to conduct her trade with South America on the basis of *aski* or compensation marks, quoted at substantial discounts below the free mark exchange rate. Her imports and exports financed in *aski* marks are, as far as possible, made to balance, and any price or cost discrepancies are equated by German subsidies.

One problem awaiting solution at the end of the year was that of reconciling in the same world liberal and totalitarian methods of international trade. In the summer Great Britain concluded a new agreement with Turkey, under which the Turkish authorities received substantial credits. In Dec. 1938, a bill was introduced extending from £50 to £75 millions the limit to the amount of guarantees to British exporters which the Export Credits Guarantee Department can have outstanding at any one time. In effect, this means that the Department can increase its activities by fifty per cent; the bill also establishes a separate fund of £10 millions, out of which the Board of Trade can assist exports in cases which *prima facie* are not sound business from the Export Credits Guarantee Department's point of view. This shows that under modern conditions, the British government is having to extend its assistance to British exports, and in that respect is taking a leaf out of the totalitarians' book. The real problem is how to make the trade of the totalitarian and liberal countries complementary rather than competitive, and this problem is not easy to solve.

In the meantime, the first and foremost need of international trade is the establishment of a better political atmosphere, to restore confidence and also to shift the emphasis of demand from munitions of war to the far wider range of commodities which we all need if we are to enjoy our daily lives. (N. E. C.)

INVENTIONS AND PATENTS. In Great Britain applications for patents during 1937, the last year for which figures are available, numbered 36,266, fewer than those for any year since 1928, with the exception of 1931 and 1935, but 399 more than in 1936; of the total, 384 applications were made by women, an increase of ten on the previous year.

Nineteen-thirty-seven was notable for the great activity displayed in all fields of invention, especially in improvements in existing processes and apparatus, and in new ideas that owe their origin to the conditions of the times. The physical fitness campaign, for instance, gave a decided stimulus to inventions relating to exercisers; A.R.P. brought in its train a number of improvements to respirators, as also in regard to the gas-proofing of buildings and the provision of air raid shelters; inventions relating to armament and munitions of war again showed a big increase; while even the Football Pools were responsible for two new types of invention—one concerned with various forms of chance-apparatus designed to be of service when filling up coupons, and the other for the prevention or detection of fraud against the promoters.

In chemistry attention has been paid to the effect of artificial resins in increasing the fastness of dyes on textile fabrics; much work has been done in the fields of synthetic drugs and fertilizers; and the demand of the aircraft and motor industries has stimulated the search for light alloys. In these two industries, also, the problem of de-icing, the provision of hydraulic operating-gear for retractable undercarriages, and fluid pressure servomotors are among the subjects of new patents; while at the meeting of the British Association in August was demonstrated a new form of "gearless" motor-car. Electricity, especially in the department of television, was responsible for many applications, but the decline in inventions relating to mercury-arc rectifier systems has continued.

The art of cinematography has been advanced by the invention of a new type of camera, by means of which filmed objects and persons are shown as three-dimensional, as through a stereoscope. The discovery of a new staple fibre, "rayolana", which has properties like that of wool and can readily be dyed, will probably have an important effect on the rayon industry; and another useful invention is that of a method of making silver "stainless" by covering it with an invisible film of alloy containing 1 per cent aluminium.

Legislation during 1938 included the Trades Mark Act, passed in April, and the Patents, etc (International Conventions) Act, in May. The former is a consolidating Act, replacing the Acts of 1905, 1919, and 1937, and repealing them in so far as they had not already been repealed; the latter was necessitated by the signature, in June 1934, of a revised international convention for the protection of industrial property and a revised international agreement regarding false indications of origin on goods. It amends the provisions of the various Patents and Designs Acts and Merchandise Marks Acts, 1887–1932, and, for the first time, gives the inventor of a patent the right to be mentioned as such on the complete specification and in the register of patents.

The most recent data and estimates available show that about 169,000 patents were granted by all the countries of the world in 1936. The number of patents granted by some countries during this year were: Australia 2,429; Austria, 3,800; Belgium 6,098; Canada 7,985; Czechoslovakia 3,650; Denmark 1,436; France 16,700; Germany 16,750; Great Britain 17,819; Hungary 2,009; Italy 11,870; Japan 4,836; Netherlands 2,615; Norway 1,406; Poland 1,791; Sweden 3,008; Switzerland 6,822; United States 44,820. In 1938 the United States granted 43,493 patents. The total number of patents granted by all the countries up to and including 1937 can be estimated as approximately 7,500,000; however, these do not involve the same number of distinct inventions, since an invention must be patented in each country to be protected in that country and numerous inventions are thus patented in a number of different countries. (L. H. D.)

INVESTMENT TRUSTS AND UNIT TRUSTS. For many years the structure of the investment trust movement has remained broadly unchanged. There are approximately 200 investment trust companies in Great Britain, controlling total investments of the order of £350 millions. During 1938, the net revenues of 211 investment trusts, after payment of debenture interest (as calculated by *The Economist*), showed an increase of 3 per cent from £10,914,000 to £11,243,000, compared with an improvement of 6·4 per cent in the profits of 2,389 industrial companies from £284·3 millions to £302·7 millions. Normally there is a time lag between the earning of higher industrial profits and dividends and their appearance in investment trust revenues. The operation of the time lag, however, was not of great assistance to the trusts in 1938, partly because industrial companies distributed their profits more conservatively, and partly because those trusts with holdings of American securities felt the force of recession during the whole year.

It is impossible to summarize the capital position of these trusts as a whole, but it is clear that whereas the values at which securities are entered in the trusts' books were in many cases covered by market values towards the end of 1937, last year produced a marked deterioration in their portfolio position. Of some fifty-six trusts whose balance sheets were examined by *The Times* during the second quarter of the year, nine showed a surplus over book values, nine reported a depreciation covered by reserves, and thirty-eight showed some measure of depreciation, after allowance for reserves. An independent sample of ten trusts whose reports appeared during the last quarter of the year showed an average depreciation of security values of 14·3 per cent.

The unit trust movement, after marking time during the later months of 1937, again expanded considerably during 1938. During the year some twenty-one new trusts were formed. Sales of unit trust securities, after allowance for repurchases, made by the 79 trusts in existence at March 31, 1938, have been computed by *The Economist* at £78,170,000, compared with a total of £67,140,000 for 72 trusts as at March 31, 1937. Despite the general setback to the security markets in 1938, it is possible that net sales at the end of 1938 might be of the order of £90–£100 millions. This sum has been wholly subscribed by the public since 1931, and most of it since 1934.

Both investment trusts and unit trusts were affected by the Prevention of Fraud (Investments) Bill, which passed its Committee stages towards the end of the year Licences, or exemption thereto granted by the Board of Trade, will be required for those who carry on the business of dealing in securities. It is proposed, however, to exempt all unit trusts which have an "approved trustee", *i.e.* a bank or insurance company, authorized to undertake trustee work, and having an issued capital of not less than £500,000, of which half must have been paid up in cash. Further safeguards have been introduced into the Bill to ensure that the general provisions of the Departmental Committee of the Board of Trade on unit trusts are observed. (R. E. Bi.)

IQBAL, SIR MUHAMMAD, Urdu and Persian poet, died in Lahore in April 1938, aged 62. He was educated at Lahore University and at Cambridge, and was for seven years professor of philosophy at the Government College, Lahore. His life and work were deeply impregnated by his passionate love of Islam, by reason of which he was brought into contact with political thought in the Punjab. His literary work, which ranks very high in the estimation of those competent to judge, includes *Secrets of the Self*, 1915 (Eng. tr. 1920); *The Mysteries of Selflessness*, 1916; *The Message of the East*, 1923; *The Call to March*, 1925 (a collection of Urdu poems); and *Songs of a Modern David*, written in Persian. Iqbal was knighted in 1923.

IRAN. The 1937 frontier treaty with 'Iraq was ratified in March 1938. In July, M. Mazaffar Aalam became foreign minister. The Shah inaugurated (Aug. 26) the Trans-Iranian Railway (Caspian Sea–Persian Gulf, via Teheran), constructed in seven years by foreign contractors (cost, £30 millions). The extensive Chalus road construction programme was pursued. In May, the Crown Prince became engaged to Princess Fawzieh, sister of the King of Egypt. In 1937, largely increased exports included two million additional tons of Anglo-Iranian oil. The year 1938 ended in a rupture of diplomatic relations with France, over what were regarded as insulting references to the Shah in her press.

Area and Population:
Area *c.* 628,000 sq. miles.
Population (est. Dec. 31, 1936) 15,000,000.
Chief Towns: Teheran (360,000), Tabriz (220,000), Meshed (140,000), Shiraz (120,000), Isfahan (100,000).

Ruler. Reza Pahlevi Shah.

Language. Persian.

Religion. Mohammedan.
Production :

Wheat (1934)	1,030,700	metric tons
Barley (,,)	761,100	,, ,,
Rice (1934–35)	520,000	,, ,,
Beet sugar (1937)	26,000	,, ,,
Cotton (1936)	37,200	,, ,,
Wool (,,)	22,200	,, ,,
Petroleum (1937)	10,440,000	,, ,,

Overseas Trade, merchandise 1936–37 :

Imports	1,073,000,000 rials
Exports	2,245,200,000 ,,

Communications :

Roads, main routes	2,420 miles
Railways, Trans Iran line	866 ,,
,, Tabriz-Julfa	123 ,,

Finance and Banking :

Revenue, ordinary (est 1937–38)	1,250,002,211 rials
Expenditure, ordinary (,, ,,)	1,248,031,737 ,,
Public Debt (Dec. 31, 1935)	98,000,000 ,,
Notes in circulation (Sept. 30, 1938)	760,000,000 ,,
Gold Reserve (,, ,,)	313,000,000 ,,
Exchange Rate	80·50 rials = £1 stg.

Education. Number of schools (1935) 5,339

'IRAQ. The year 1938 opened with the appointment (Jan. 11), as British ambassador in Baghdad, of the late minister in Sofia, Mr. Maurice Drummond Peterson, who was subsequently knighted. The eastern frontier question having been settled by the 1937 treaty with Iran (ratified in March), affairs beyond the western boundary attracted attention. In February the government announced that homeless Assyrians would be aided, and in October the foreign minister, Seyyid Taufiq al Suwaidi, arrived in London before proceeding to Beirut to mediate in Syria. November's decision not to partition Palestine caused relief. In May a five year plan, mainly of urgently-needed public works, to cost £8,250,000, was approved, to be financed chiefly from oil-royalties; an oil concession for southern 'Iraq was granted (July). Irrigation schemes include the Kut Barrage, and Hawijah and Abu Ghurlab (Euphrates Baghdad) Canals, transport schemes, a linkage with the Syrian railways, ultimately giving (assuming a Bosporus train-ferry) a nine-day Europe–India route. Meanwhile, the German Lufthansa opened to passengers (March) its Baghdad air-services. The metric system is being gradually introduced. December brought the fall of the Midfai government; General Nuri es-Said, prime minister 1930-32, but in exile since the 1936 *coup*, resumed the post, and other exiled statesmen returned. (H. Fw.)

Area and Population :
Area : 116,000 sq. miles.
Population (est. Dec. 31, 1936) 3,000,000.
Chief Town : Baghdad (pop. 1938 *c.* 400,000) capital.
Ruler. King Ghazi I.
Language. Arabic.
Religion. Mohammedan.
Production 1937 :

Wheat	580,000	metric tons
Barley	570,000	,, ,,
Rice	150,000	,, ,,
Cotton	4,500	,, ,,
Petroleum	4,258,000	,, ,,
Tobacco (1936)	5,500	,, ,,
Wool (,,)	7,200	,, ,,

Overseas Trade 1937 :

Imports	9,566,000 dinars
Exports	5,569,000 ,,

Communications 1938 :

Roads, main routes	3,130 miles
Railways, open to traffic	752 ,,

Finance and Banking :

Revenue (est. 1937–38)	4,728,880 dinars
Expenditure (est. 1937–38)	4,727,800 dinars
Revenue (est 1938–39)	5,669,490 ,,
Expenditure (,, ,,)	5,462,490 ,,
Public Debt (Dec 31, 1937)	1,000,000 ,,
Notes in circulation (Sept 30, 1938)	4,100,000 ,,
Foreign Assets Reserve (,, ,,)	5,000,000 ,,
Exchange Rate	currency based on sterling 'Iraq dinar 1 = £1 stg

Education 1935 :

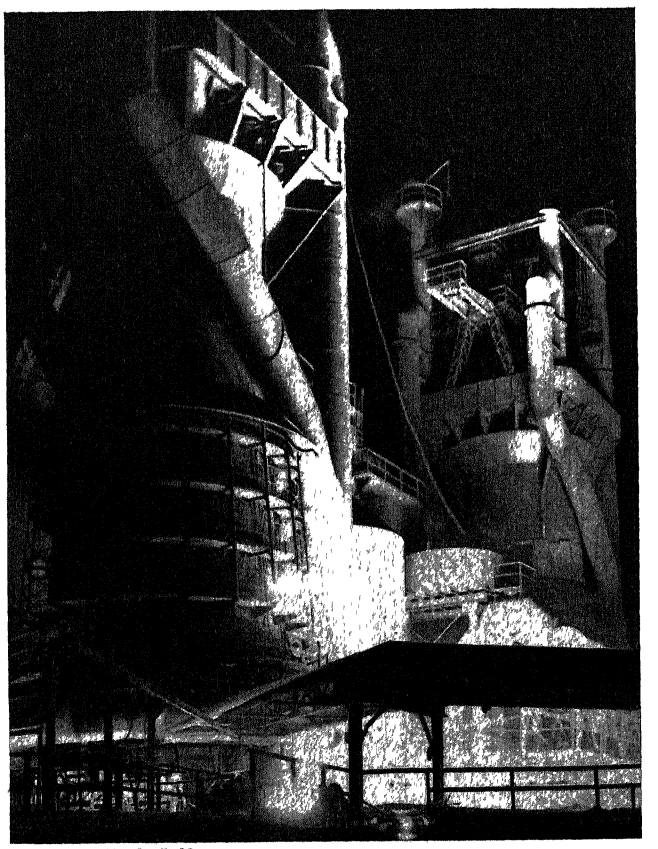
Government elementary schools, 528, scholars	60,342
New schools opened in 1935–36	77
Secondary schools, 6, scholars	642

Defence :
The Army consists of the Royal 'Iraq Air Force, one cavalry brigade, two infantry divisions (each having three infantry and two artillery brigades), and one frontier brigade. Every male is liable for service at nineteen years of age

IRISH FREE STATE : *see* EIRE.

IRON AND STEEL. Discussion of the iron and steel industry can for the most part be handled more satisfactorily subdivided into three main headings—iron ore, pig iron, and steel. The production tables found below under each of these headings include all countries in which production of the commodity in question has exceeded one million tons. This coverage in general accounts for 93–98 per cent of the totals. In some cases only preliminary estimates can be given for the outputs of pig iron and steel for 1937.

Iron Ore. World production of iron ore had decreased in 1932 by 64 per cent from the 1929 high level, and recovered to 107 per cent of the 1929 level in 1937. Three countries, the United States, France, and the Soviet Union, contribute nearly two-thirds of the total, while the other two of the leading iron and steel producers, the United Kingdom and



Stewarts & Lloyds, Ltd.]
TWO BLAST FURNACES AS SEEN BY NIGHT AT THE CORBY IRON, STEEL AND TUBE WORKS, NORTHAMPTONSHIRE, INCORPORATING THE MOST RECENT PRACTICE AND SPECIALLY ADAPTED TO HANDLE THE CORBY ORES

Germany, add another ten per cent. By the end of 1937 the United States had recovered to 99 per cent of the 1929 total, but 1938 will show another decline French production is still well below the record figure, but the United Kingdom and Germany have both risen above the 1929 level, and there have been heavy increases in the Soviet Union.

Exports of iron ore from the United States are small, being of the order of one per cent of production; imports are somewhat larger, and average three to five per cent of production, about one-half of which comes from Chile and one-fifth from Cuba The Russian industry is even more nearly self-contained than that of the United States. Germany produces only about one-quarter of her requirements, and imports three-quarters, while the United Kingdom produces about two-thirds and imports one-third Sweden exports almost her entire output, mainly to Germany, and about one-half of the French output is exported to Belgium and Germany.

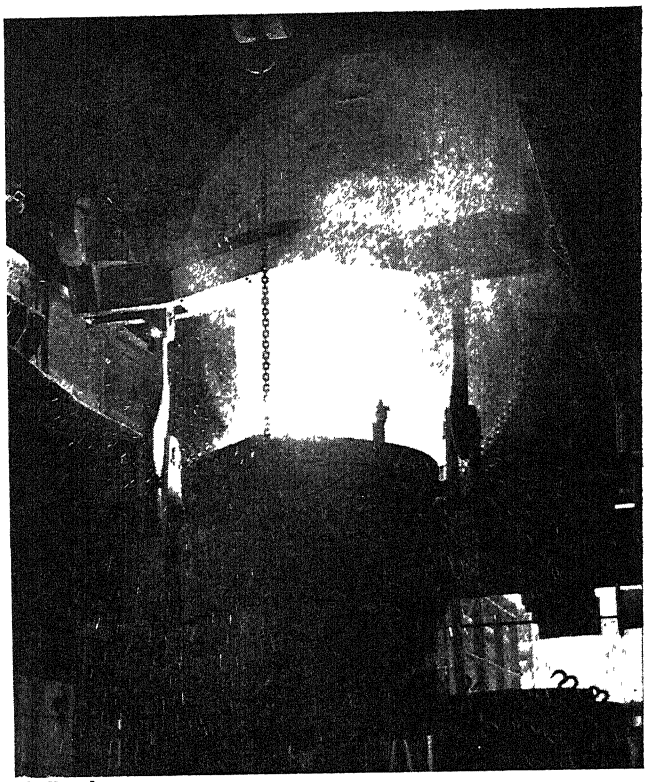
World Production of Iron Ore

(In millions of long tons)

	1929	1932	1935	1936	1937
NORTH AMERICA					
NEWFOUNDLAND	1·5	0·1	0·6	0·7	1 6
UNITED STATES	73·0	9 8	30 5	48·8	72 1
SOUTH AMERICA					
CHILE	1·8	0·2	0 8	1·3	1 5
EUROPE					
AUSTRIA	1 9	0 3	0 8	1·0	1·9
CZECHOSLOVAKIA	1·8	0·6	0 7	1·1	1·8
FRANCE	49·9	27·2	31·6	32·7	57·3
GERMANY	6·3	1·3	5 9	7·5	7·7
LUXEMBURG	7·5	3 2	4·1	4·8	7 6
SPAIN	6·4	1·7	2 6	?	?
SWEDEN	11·3	3 2	7 8	11·1	14 7
U S.S.R	6·9	12·0	26 4	27·5	?
UNITED KINGDOM	13·2	7 3	10·9	12·7	14·2
ASIA					
CHINA	2·6	2·2	?	?	?
INDIA	2·4	1·8	2 3	2·5	2·9
MALAYA	0·8	0·7	1·4	1·7	1·7
AFRICA					
ALGERIA	2·2	0 5	1·6	2·1	2·3
MOROCCO (SPAN.)	1·2	0·2	1·1	1·1	1·4
AUSTRALIA	0·9	0·6	1·0	1·9	1·9
WORLD TOTAL	200·0	75·0	140·0	170·0	214·0
Non-British	191·1	64 3	122·0	149 5	191·6
Brit. Empire	18 9	10·7	18·0	20·5	23·4

Pig Iron. World production of pig iron decreased by 22 per cent in 1938, to 79,344,000 metric tons, in spite of Germany, the Soviet Union, Poland, Japan, Spain, Sweden, and Italy showing increases. Part of the increase listed for Germany was due to the annexation of Austria, the comparable figure for Germany and Austria combined in 1937 being 16,026,000 tons. The gains in these countries totalled 3,242,000 tons, of which Germany contributed 67 per cent, the Soviet Union nineteen per cent, Poland seven per cent, Japan six per cent, and the others one per cent. In contrast to this, other producers had losses totalling 24,886,000 tons, distributed as follows: United States seventy per cent, France nine per cent, United Kingdom seven per cent, Belgium six per cent, Luxemburg four per cent, Czechoslovakia four per cent, Canada one per cent, others one per cent. The outputs of Germany, the Soviet Union, and Italy in 1938 were new high records.

Exports of pig iron from the United States are almost non-existent, and imports are negligibly small. Russian imports are apparently small, and exports take about five per cent of the output. In Germany and France imports average about one per cent and exports about two per cent



The Times]

STEEL BEING POURED FROM A CONVERTER INTO A LADLE AT THE CORBY WORKS, NORTHAMPTONSHIRE

of production, while the United Kingdom imports are four per cent and exports two per cent. In all cases the amounts are so small as to be of little practical importance. In some cases, however, considerable amounts of scrap metal are imported, to take the place of pig iron in the production of steel.

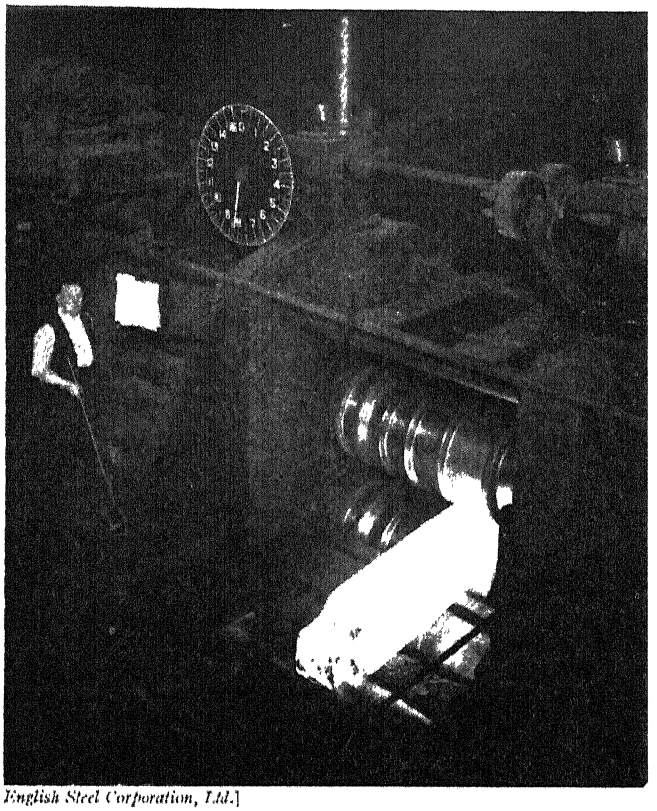
Steel. World steel production in 1938 dropped by twenty per cent, a slightly better figure than with pig iron, to a total of 105,596,000 tons. Countries showing increased outputs made 3,729,000 tons more than in 1937, of which 65 per cent was in Germany, 24 per cent in the Soviet Union,

World Production of Pig Iron

(In millions of long tons)

	1929	1932	1936	1937	1938
NORTH AMERICA					
CANADA	1·2	0·2	0·7	1·0	0·7
UNITED STATES	42·6	8·8	31·0	37·1	19·3
EUROPE:					
BELGIUM	4·0	2·7	3·2	3·8	2·3
CZECHOSLOVAKIA	1 6	0·4	1 1	1·6	1·2
FRANCE	12·3	6·8	6 1	7·8	5·7
GERMANY	13·2	3·9	15 1	15·7	18·2
LUXEMBURG	2·9	1·9	2 0	2·5	1·4
U S.S.R.	4·0	6 3	14·1	14·4	14·8
UNITED KINGDOM	7·6	3·6	7·7	8·5	6·7
ASIA					
INDIA	1·4	0·9	1·5	1·6	?
JAPAN	1·5	1·5	2·2	3·2	3·1
WORLD TOTAL	97·2	39·2	90·3	101·6	79·3
Non-British	86·7	34·3	79 3	90·2	?
Brit Empire	10·5	7·9	11·0	11·4	?

three per cent in Italy, four per cent in Japan, and one per cent in Spain and Poland. New records were reached in Germany, the Soviet Union, Japan, and Italy. It is interesting to note that the combination of the tag end of the 1937 business recession in the United States and the pressure



English Steel Corporation, Ltd.]
COGGING OR ROLLING A 28-CWT. ALLOY STEEL INGOT IN A 28-IN. COGGING MILL AT A SHEFFIELD WORKS

of rearmament activities in Germany resulted in a German output for the first half of 1938 that was greater than that of the United States; this, however, was reversed in the second half. Offsetting these increases, we have losses totalling 31,426,000 tons, distributed as follows: United States 72 per cent, United Kingdom eight per cent, France six per cent, Belgium five per cent, Luxemburg three per cent, Czechoslovakia two per cent, and others four per cent. The recent shifts in the map of Europe added some 500,000 tons of steel capacity to Germany through the annexation of Austria and the Sudetenland of Czechoslovakia, while Poland gained as much as or more than Germany; 1939 figures may then be expected to double in Poland, and to halve in Czechoslovakia. The Soviet Union will doubtless also show another material increase in 1939, since in 1938

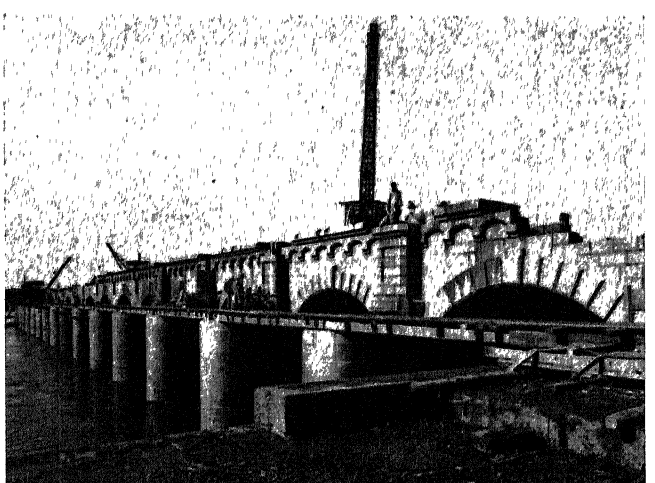
World Production of Steel
(In millions of long tons)

	1929	1932	1936	1937	1938
NORTH AMERICA:					
CANADA	1·4	0·3	1·1	1·4	1·1
UNITED STATES	56·4	13·7	47·8	50·6	28·0
EUROPE:					
BELGIUM	4·0	2·7	3·1	3·8	2·2
CZECHOSLOVAKIA	2·2	0·7	1·5	2·3	1·8
FRANCE	11·7	6·9	6·6	7·8	5·8
GERMANY	16·0	5·7	18·9	19·5	22·6
ITALY	2·1	1·4	2·0	2·1	2·3
LUXEMBURG	2·7	1·9	2·0	2·5	1·4
POLAND	1·4	0·5	1·1	1·4	1·4
SWEDEN	0·7	0·5	1·0	1·1	0·9
U.S.S.R.	4·6	5·7	16·3	17·1	18·4
UNITED KINGDOM	9·6	5·3	11·8	13·0	10·4
ASIA:					
JAPAN	2·3	2·4	5·2	5·7	5·9
WORLD TOTAL	118·1	49·9	121·9	132·5	105·6
Non-British	106·1	6·7	107·2	116·2	?
Brit. Empire	12·0	13·3	14·7	16·3	?

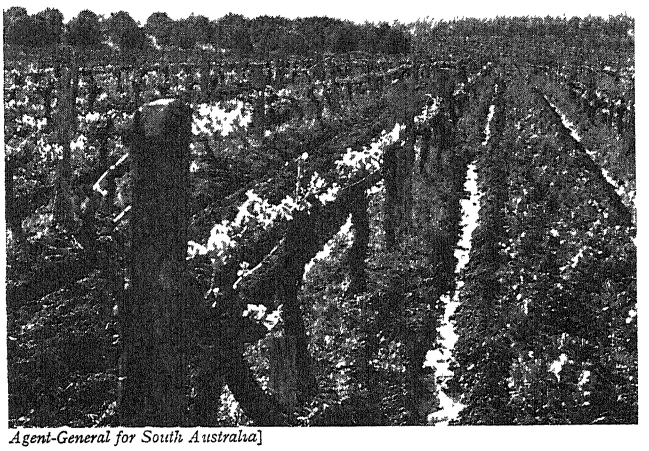
new construction was under way on five blast furnaces, two Bessemer converters, nine open hearths, one blooming mill, one continuous strip mill, two wire mills, and two plate mills

The United States steel industry is practically independent of imports, and exports amount to only about seven per cent of the production. Among the European producers international trade plays a much larger part in the industry, except for the Soviet Union, in which exports are small and imports run about four per cent. The United Kingdom has steel imports of about twelve per cent and exports of nineteen per cent of production, leaving a net export of seven per cent. Germany imports three per cent and exports nineteen per cent, or a net export of sixteen per cent. France imports two per cent and exports 33 per cent, making a net export of 31 per cent. The Economic Union of Belgium and Luxemburg are still heavier exporters, sending out 14 per cent of the combined output. Incidentally, these European percentages, though still fairly large, have been decreased by about one-half during the past decade by export and import restrictions and embargoes that have been put into effect in these and other countries to which exports were formerly made. (*See* also METALLURGY.) (G. A. Ro.)

IRRIGATION AND FLOOD CONTROL. In Great Britain, actual work on many large drainage and flood protection schemes is awaiting final agreement with the government on finance, while over two hundred small schemes for improvement of land in need of drainage have been approved for grant under the Agriculture Act, 1937. The Fen country schemes may cost about £6 millions eventually, and include the Great Ouse remodelling below King's Lynn, the chief feature being the protection of the bed by brushwood mattresses on a large scale, with extension of the banks into the Wash, while the provision of a new river for some distance above King's Lynn is under discussion. Other works projected or in hand are on the Lea river, where floods will be relieved by widening from Stratford to the Hackney Marshes and remodelling the Dagenham Brook for three miles, the total cost being £1,180,000; a fifteen-year flood protection scheme begun on the river Don in Yorkshire, including both pumping and embankments, costing £500,000; turning Bala lake into a reservoir to reduce flooding on the river Dee; training the rivers Yare and Waveney in east Norfolk for about £250,000 each; raising by about two feet, and strengthening, about 300



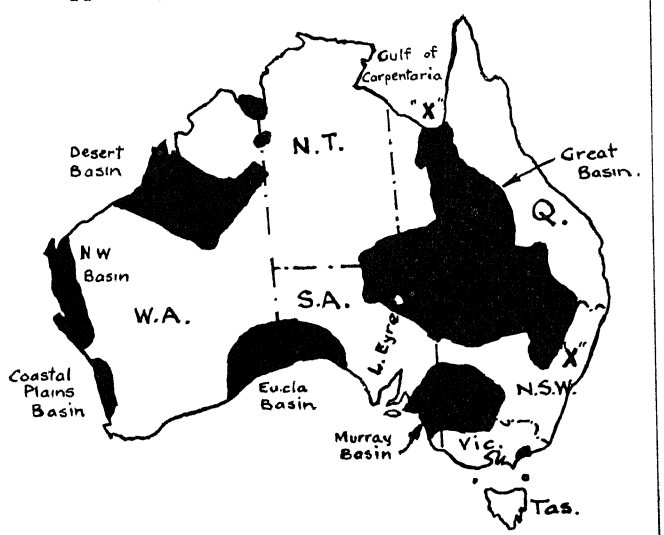
Coode, Wilson, Mitchell & Vaughan-Lee]
DAMIETTA BARRAGE. THE BUILDING OF THE SUPERSTRUCTURE IN PROGRESS, DEC. 15, 1938



Agent-General for South Australia]
IRRIGATED LAND ON THE RIVER MURRAY SETTLEMENT, SOUTH AUSTRALIA

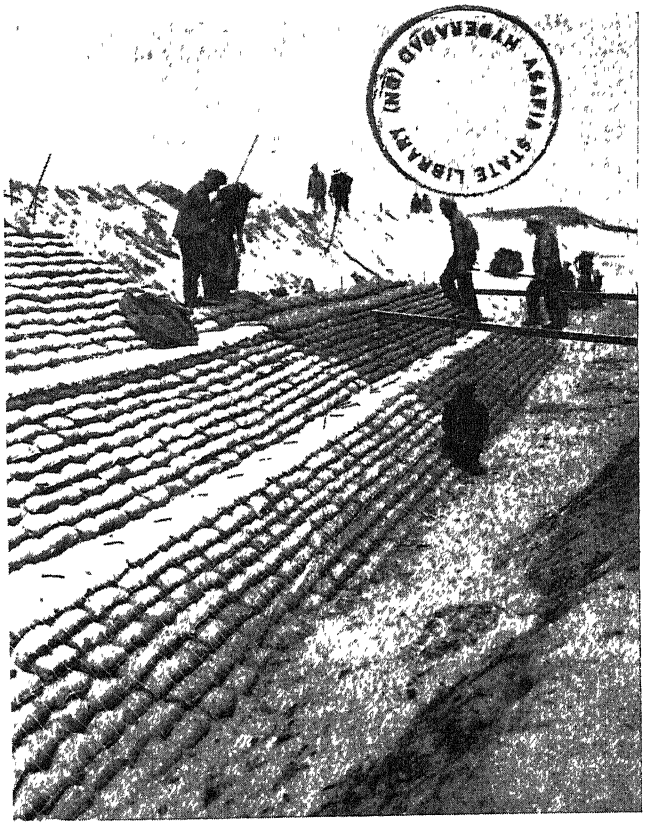
miles of sea and river-bank in Essex from the Thames at Rainham to the river Stour, to cost about £1 million and take fifteen years ; river Arun works, including two pumping stations, to cost about £200,000 ; and a £550,000 project on the tidal waters of the river Parrett in Somerset. Proposals for a Thames barrage claimed flood protection for London as one main advantage, but were rejected by the government for defence reasons. Floods in London appear to be largely caused by the coincidence of surges due to storms in the North Sea with high up-river discharges, and the effect of storms on tide levels in the Thames estuary is therefore being investigated.

Australia. In Victoria, the completion of reservoirs now under construction will provide about two million acre-ft. of storage, capable of being increased by about twenty per cent and protecting about two million acres, of which most are supplied by gravity, though a substantial area depends



Civil Engineering (London)]
ARTESIAN BASINS OF AUSTRALIA

on pumps. Extensive drainage works for flood protection, originally adequate, are now being remodelled as denudation of the catchment areas has increased floods. In New South Wales, a reservoir is to be constructed on the Namoi river to hold 345,000 acre-ft., for which two dams will be required.


STATE LIBRARY NEW SOUTH WALES

Fox Photos]
STRENGTHENING THE DUNES WITH CONCRETE-FILLED SANDBAGS BANDED WITH IRON RODS, AFTER THE BREACH MADE BY THE SEA AT HORSEY, NORFOLK, MARCH 1938

India. Staunching canals by sodium carbonate, which turns calcium clays into sodium clays, has been so successful that the process is to be tried on a large scale. The Haveli Irrigation Project is being completed in two years instead of the original five, giving an estimated saving of about £1,500,000. It comprises the Trimmu headworks on the Chenab river (the Emerson barrage), enabling this river to feed the river Ravi, the Abdul Hakim headworks on the latter river, and the necessary canals. The Emerson barrage will be the largest work in the Punjab, with maximum head 29 ft. and maximum estimated flood discharge 650,000 cusecs (cubic feet per second) under a 3 ft. afflux. It will have 37 bays of 60 ft. each and 14 bays of undersluices of 30 ft. each, the overall width between flanks being 3,025 ft. The Haveli Canal has been lined with special brick tiles for its first 45 miles, thus saving 250 cusecs. A smaller work is the river Jhankari project in Baroda, costing about £1,500,000, including a dam on that river ; while an interesting scheme in the North-West Frontier Province irrigates the Khajuri plain from wells in the Afridi country for about £40,000. In the United Provinces, power from the falls on the Upper Ganges Canal is largely used for pumping from nearly 1,500 tube wells, which irrigate about 625,000 acres normally, but up to 750,000 acres in drought years. The scheme cost about £9,500,000.

'Iraq. The Abu Ghoraib scheme on the left bank of the Euphrates is completed ; the main canal is forty miles long and protects about 120,000 acres. The Kut barrage on the Tigris, with the Gharraf Channel headworks, has been completed, and the earthwork on the channel is in hand. In the 'Iraqi desert, also, wells are being sunk for the herds and their pasturage in the dry season.

Africa. In Nyasaland, too, small wells giving up to about

6,000 to 10,000 gallons per day each, are to supplement local supplies, and thus open up new country or allow closer settlement.

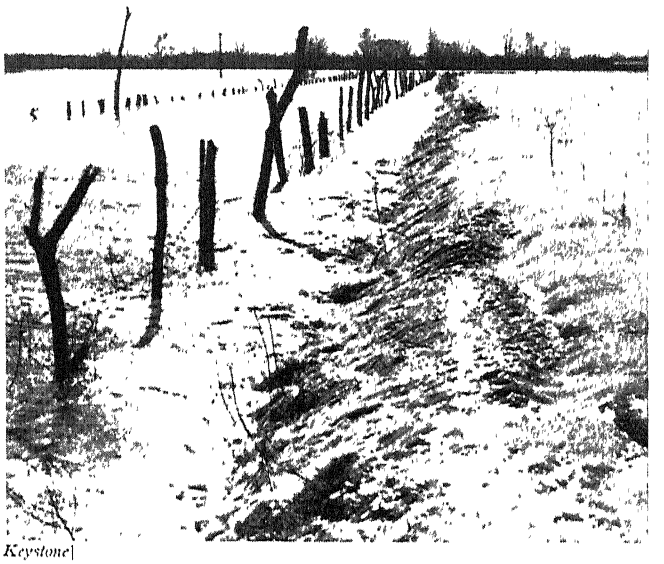
The Netherlands. Two banks twenty miles long exclude the tide from 880,000 acres and form the Yssel lake. They were made of local boulder clay, and built in an average depth of 14 ft. at low tide, with deep channels going down to between 40 and 60 ft. One area ("polder") of about 50,000 acres has been reclaimed, and a second, of about 120,000 acres, is in hand. Irrigation is carried out by altering water levels in ditches, and thus applying the water direct to the roots of the crops, the land not being flooded. Two regulators of 1,000 ft. length of sluice opening with 14 ft. depth on the sill make possible the essential very close control of levels. The water was good enough for cattle and agriculture by the end of 1935, the dykes having been closed in May 1932, and was declared "fresh" in March 1937.

Italy. Work is beginning on irrigation schemes to cost about £500,000 and protect about 150,000 acres situated on the rivers Ticino and Mincio, which will be trained, and their lakes, Maggiore and Garda respectively, be controlled as reservoirs.

Greece. River training works, dams, and canal systems are being built to protect over 3,700,000 acres, situated mostly on the mainland, but partly in Crete. The works are to cost £2,250,000 and take seven years to complete.

Russia. The Greater Volga scheme should provide irrigation for 2,500,000 acres by 1943, and for the whole of the first scheme of 6,250,000 acres by 1947. By pumping with about half the power from the Kuibyshef hydro-electric scheme (now re-designed to consist of one station instead of two), the wheat crops will be stabilized on the Volga plain, lying over 200 ft. above the river and much subject to droughts. The Shakhruda irrigation system in the Bokhara oasis, about 1,000 years old, the Vakhsh system in Tajikistan, about 600 years old and commanding about 175,000 acres, and the Kirsk system in Armenia are all being revived.

Egypt. The Nile flood of 1938 was the highest of this century, exceeding the four other high floods of 1916, 1917, 1929, and 1934, but being less than the four great floods of the preceding thirty years: 1874, 1878, 1887, and 1892. The flood was controlled by using the Aswan reservoir, as had been done only once before in 1934 to some slight extent, and the Upper Egypt Basins, thus keeping the maximum Aswan level down to 93·32 (metres above Alexandria mean sea level), though it would otherwise have approached 93·50, the highest ever recorded being 94·15 in 1878. Comprehensive flood protection schemes have long been studied, but owing to the diversity of expert opinion and the great expense of any project, no decision has yet been reached, and the country relies on its 2,500 kilometres of Nile banks, stretching from Aswan to Cairo and thence to Rosetta and Damietta, respectively. The main alternatives are (1) heightening and strengthening the whole of the Nile banks; (2) remodelling the Rosetta branch to make it an effective flood escape; (3) turning the Wady Rayan into a flood escape; this is a deep depression in the western desert, south of the Fayum; (4) heightening the White Nile dam to make its reservoir into a flood escape, to be filled from the Blue Nile flood by an artificial cut across the Sudan Gezira. The Assiut barrage remodelling in Middle Egypt is finished, while the Mohamed Ali barrages which are to replace the old Delta barrage, about 25 miles below Cairo, are to be finished in 1939.



Keystone

WATERS FROM THE FLOODED RED RIVER SPILLING OVER A LEVEE NEAR FULTON, ARKANSAS, U.S.A., FEB. 1938

French West Africa. An irrigation project in the Niger delta to protect about 2,500,000 acres includes a navigation canal, roads, railway, and flood protection banks. The cost will be approximately £2 millions, about half going on the Sansanding Dam, nearly 1½ miles long. A short main canal discharges 10,600 cusecs to feed the Sahel Canal, serving about 1,500,000 acres, and the Macina Canal, over one million acres.

Mexico. A large reservoir is projected on the Nazas river to hold about 13,000 million cubic metres, and to be made by an earth and rockfill dam about 100 metres high.

Argentina. A dam on the Neuquen river provides irrigation for about 150,000 acres, and will soon afford flood protection by making use of Lake Pellegrini. The total cost will be about £1 million.

Tongking. In the delta of the Red river (Song Koi) flood protection, irrigation and drainage combined have been provided for about 400 square miles. A barrage, nearly completed, capable of holding a head of about thirty ft. will relieve the banks protecting Hanoi by diverting 100,000 cusecs out of the Red river flood, whose maximum is estimated at about 700,000 cusecs, down its branch, the Day river. The barrage will probably only be used for less than a week about once in every three or four years; the Day river will at other times be a drain.

China. The floods of the Huai river, a tributary of the Yellow river, are to be controlled by the Chiangpa barrage, below the Hungtze lake, which will become a reservoir big enough to take the peak off the highest flood, estimated at 15,000 cubic metres per second, of which only 9,000 will pass the barrage. The flood control scheme also requires several smaller regulators on various lakes and rivers subsidiary to Lake Hungtze. (F. Ne.)

United States. During 1938, water supplies for irrigation in the western United States were normal in quantity or above normal, except in the south-west; *i.e.* in Arizona and southern California. Super-normal winter precipitation followed by disastrous local floods occurred in central and northern California. Construction work was completed on Imperial dam on the Colorado river, and approached completion on the All-American Canal connect-



Keystone]
LAND IN HONAN, CHINA, FLOODED BY THE YELLOW RIVER, JUNE 1938

ing Imperial dam with the Imperial valley. Construction work on other Federal projects has been accelerated by funds appropriated by Congress or allocated from funds appropriated for the relief of unemployment Amongst more important of these are : (1) the Grand Coulee dam on the Columbia basin project, (2) the Kennett dam on the Sacramento river of the Central valley (California) project, and (3) the main canal of the Yuma-Gila project in Arizona.

In consequence of a growing appreciation of the economic importance of irrigated areas throughout the West to the successful utilization of the vast surrounding areas of dry farming and range lands, increasing attention has been given to those factors that may impair the continued productivity of irrigated land These factors include : (1) the ravages of insect pests and plant diseases ; (2) noxious weeds ; (3) harmful accumulation of subsoil water due to inadequate drainage ; (4) harmful accumulation of soluble salts in the soil due to the sparing use of irrigation water and inadequate root zone leaching ; (5) the impairment of the physical condition or permeability of the soil through the use of irrigation water containing sodium salts ; and (6) the intensive cropping of land without a system of crop rotation and fertilization designed to maintain the productivity of the soil. These problems have long been the subjects of investigation by a large number of Federal and State agencies, and definite progress has been made recently in adopting the findings and recommendations.

A Selected Bibliography on Irrigation has been compiled by Dorothy W. Graf and issued during 1938 by the Bureau of Agricultural Engineering of the U.S. Department of Agriculture. It is a mimeographed volume of 631 pages that should be of value to students of this subject.

Floods of 1938. The year was marked by several serious floods. In Turkey, heavy rains caused inundations and much damage in the Menemem and Manisa valleys near Smyrna in January ; there were further floods in Turkey in July. In January and February floods also occurred throughout Germany ; in northern France ; in the Benevento region in Italy ; in Central Australia, and in Ontario, Canada. Several parts of North America suffered severely at different times throughout the year. In March the rapid melting of snow in Eastern Canada caused serious floods, and in September there were heavy rains accompanied by loss of life in the Province of Quebec. The United States fared still worse. In California during February much damage was done in the Sacramento –San Joaquin river delta area, in March in the neighbourhood of Los Angeles, when many were reported missing and thousands homeless. Parts of the Middle West and the South (Alabama, Georgia, and Texas) were flooded during March and April, Colorado in September ; and later in September torrential rains caused flood conditions to prevail along the Atlantic coast. While these heavy rains were in progress a tropical storm of hurricane proportions struck the New England coast. The hurricane caused most of the damage by up-rooting trees, blowing down poles and wires, and breaking windows and demolishing buildings. It was estimated that over 600 people lost their lives. The worst flood of all, however, was during June, in China, when heavy rain caused breaches in the dykes of the Yellow river and flood water poured over the Honan plains inundating hundreds of villages and causing heavy loss of life In Kweichow Province in July more than 2,000 were reported drowned. Japan also suffered from floods during July ; at Kobe more than 871 were reported drowned or missing. Following a typhoon in Japan in September there was further serious flooding Early in December 1938, many houses were wrecked when floods swept the Urfa region in south-east Turkey near the Syrian border. On the same date in northern Luzon, Philippine Islands, floods caused by torrential rains rendered 9,000 people homeless. (*See* also ACCIDENTS AND DISASTERS.)

ISLAM. The recent political convulsions in the world of Islam have stirred the Muslim mind to its depths in all departments of Muslim life. The doctrine of Islamic Brotherhood (*Ukhūwat al Islamīya*) has been one of the basic principles of Islam, and strong emphasis was laid on it in the Prophet's Sermon at the Farewell Pilgrimage. It implies a disregard of racial, political, geographical, and linguistic barriers among mankind. So long as the great 'Abbaside Empire, and later, the Ottoman Empire, maintained some semblance of universality in the core of the Islamic world, local movements in contrary directions could be disregarded as mere ephemeral phases. Since the dissolution of the Ottoman Empire, the question has been much agitated. The revival of the Khilāfat was proposed, but no practicable scheme has been forthcoming. The idea of nationality has taken strong root in the modern Islamic States, and Turkey and Irān, and to a certain extent Egypt, along with 'Irāq, Sa'ūdī Arabia, and Afghanistan, are working on nationalist lines. But the desire for integration remains strong among them. It took shape in July 1937 in the Pact of Saadabad (so called from the name of a Palace in Teheran), between Turkey, Irān, 'Irāq, and Afghanistan. The possible inclusion of Egypt is adumbrated, with a conference to be held in Kabul in the spring of 1939. The treaties of Sa'ūdī Arabia with Yaman (1934), with 'Irāq (1936), and with Egypt (1936) are expressed to be in the spirit of " Islamic Sincerity and Arab Brotherhood ". To the Sa'ūdī 'Irāqi treaty Yaman gave its adherence in 1936, and the framework contemplates the possible adherence of other Arab states. Thus the first steps have been taken in the creation of an Arab Federation, and simultaneously of a Near-Eastern *bloc*. On the other hand the friction between Arabs and Turks in the Sanjak of Alexandretta, Antioch, and its dependencies, has caused an outbreak of violent racial feeling in 1938, on the eve of the emancipation of Syria from the French Mandate.

The settlement of Arab strikes in Palestine had been



TOKYO MOSQUE, OPENED MAY 12, 1938

facilitated by the friendly intervention of the neighbouring Arab kings. But the more serious rebellion of 1938 still remained unquelled in October 1938. Anti-Jewish feeling has been greatly inflamed, not only in Palestine, but in all Arab and Islamic countries, which lay the blame on the shoulders of Britain as the Mandatory Power in Palestine. Non-official feeling on the subject runs strong in Syria, 'Irāq, Egypt, and India, and a conference of Muslim legislators in those countries was held in Egypt and in Syria, in the autumn of 1938. The Arab Christians are in this matter acting with the Muslims.

Recent marriage contracts in Islamic royal houses have brought out interesting points in Islamic law and usage. The young King Farouk of Egypt married Mlle. Farida Hanum Zulfiqar (Jan. 20, 1938) with due Muslim rites, and the contract was drawn up by a religious council under the supervision of the Shaikh of al-Azhar. The young Queen appears in public but under a transparent veil, and the custom of the veil for women is being rapidly modified in all Muslim countries. The marriage of King Zog of Albania to the Roman Catholic Countess Geraldine Apponyi (April 27, 1938) was celebrated by a purely civil ceremony. This is consistent with Islamic law. Presumably the children will be brought up as Muslims. The engagement was announced (May 27, 1938) between the Crown Prince of Irān to Princess Fauzieh, eldest unmarried sister of the King of Egypt. The Crown Prince is a Shi'ah and the bride is a Sunni. Shi'ah-Sunni marriages are not rare in Islam, and are of course perfectly legal. But their occurrence in reigning families betokens an inter-sectarian *entente* in other directions. Mirza 'Abd-al-Karīm Zanjāni, the well-known Shi'ah Mujtahid of Najaf, has unequivocally supported such an *entente* on religious grounds, and Shi-'ah divines have been known with common consent to lead prayers in mixed congregations at Muslim conferences.

The movement for liberalism and modernism is gaining ground. The Azhar University in Cairo is approaching it from the Orthodox and conservative angle, while papers like the Egyptian *al-Manār* and the new State University in Egypt, and, still more, the practice of men and women in the public eye in Muslim countries, represent a wider outlook on world standards. The Azhar University is opening courses in modern languages (including Urdu and Japanese) and modern sciences. It recently sent a good-will mission to Islamic countries. Modern Quranic translations and commentaries in world languages as well as local languages are becoming popular. Legislation, too, like the Auqāf Bill in the Punjab Legislative Assembly, for the more efficient management of religious endowments, is being invoked in the development of modern ideas.

The most recent foreign Mosque is that opened with great ceremonial in Tokyo on the Prophet's birthday, 1357 H., being May 12, 1938. Invitations were issued by the Muslim Association of Japan to Arab governments. The governments of Sa'ūdī Arabia, Yaman, and Egypt sent representatives. They were received by the Japanese foreign minister, and Japanese generals and officials attended the ceremony. One result is expected to be the recognition of the religion of Islam along with other religions by Japanese legislation, and the exemption of the Mosque, as a recognized religious building, from taxation. The architecture of the Mosque is in Tatar style, with a dome and a high minaret. The Muslim community in Japan consists of Indian merchants, Tatar refugees, and a small nucleus of Japanese. (A. Y. A.)

ISLE OF MAN. Island in the Irish Sea, forming part of the British Empire. It has a local parliament, the Tynwald Court, but in certain respects is subject to the Imperial Parliament at Westminster. One of these is postal administration, and in 1938 the British Postmaster-General refused a request for distinctive postal stamps, as the question of such a stamp would raise wider issues.

The chief products are woollen goods, salt, and fish; but the island relies for its prosperity mainly on the 500,000 annual holiday-makers. Shipping and air services link up with England and Ireland.

Area and Population :
Area 227 sq. miles.
Population (est. March 31, 1938) 48,500.
Chief Town : Douglas (cap.), population 19,329.
Governor. Vice-Admiral the Hon. W. S. Leveson-Gower, C.B.
Language. English.
Religion. Christian (mainly Church of England).
Labour 1938 :
Insured workers under the Health Insurance and Pensions Acts, number : men, 11,934 ; women, 5,964.
Unemployed, number (Dec. 3, 1938) . . 1,809
Communications 1938 :
Roads, main : first-class, 111 miles ; second-class, 151 miles.
Railways, 47 miles ; electric train, 25 miles.
Finance and Banking 1937–38 :
Revenue £571,530 ; Expenditure £540,457.
Public Debt 1938 . . . . . £638,000
Note Issue, total . £195,000 (Insular Banks £130,000)
Education 1937–38 :
Elementary : 33 schools ; 5,349 scholars
Secondary : 5 ,, ; 1,150 ,,
Miscellaneous 1937–38 :
Motor vehicles licensed : commercial and private cars, 3,849 ; taxis and coaches, 483 ; cycles, 912.
Wireless receiving-set licences . . . . 9,982.
Telephones, number. . . . . 2,775.

ITALIAN COLONIAL EMPIRE. Total area (approx.), 1,388,700 sq miles; Total population (est. Dec. 31, 1936), 50,838,000. The following table lists the colonial possessions of Italy, together with essential statistics appropriate to each of them, including the mother country itself.

Country	Area sq miles (approx)	Population est Dec 31, 1936 (000's omitted)	Capital	Status	Governors, Premiers, etc
Italy	119,740	42,677	Rome	kingdom	*King*. Victor Emmanuel III. *Premier* Benito Mussolini.
AFRICA					
Libya	682,000	900	Tripoli	to be included in the national territory of Italy	*Governor-General* Marshal Balbo.
Italian East Africa, including Eritrea, Italian Somaliland, and Ethiopia	586,000	7,120	Addis Ababa	colony	*Viceroy*: H.R.H the Duke of Aosta.
ASIA					
Dodecanese Is.	960	141	Rhodes	colony	*Governor*. Count de Vecchi.

ITALIAN EAST AFRICA. In Jan. 1938 a decree was published authorizing a special expenditure of twelve million lire on public works in Abyssinia, and an annual state contribution of 1,000 million lire for six years. Trade agreements were signed (Feb. 7) with Germany for African development. British and Anglo-Egyptian interests were safeguarded in Agreements (Nov. 16) concerning the Sudan and Kenya frontiers with Abyssinia, control of the Lake Tsaana head-waters, and trade routes through British Somaliland.

Area and Population :

Area, total *c.* 586,000 sq. miles.
Population (est. Dec. 31, 1936) *c.* 7,120,000.
Chief Towns: Addis Ababa (Ethiopia), Asmara and Massawa (Eritrea), Mogadiscio (Somaliland).

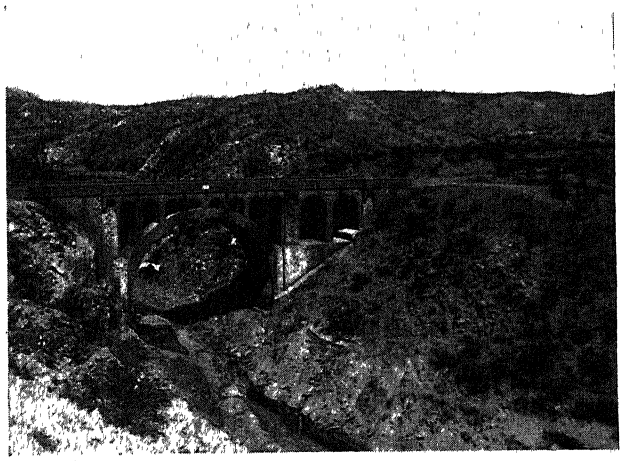
Ruler. Emperor Victor Emmanuel III.

Viceroy. H.R.H. the Duke of Aosta.

Religion. Christian (Ethiopia mainly), Mohammedan.

Production :

Wheat (Eritrea) (1936)	11,300	metric tons
Barley ,, (,,)	19,900	,, ,,
Maize ,, (,,)	4,100	,, ,,
Maize (Somaliland) (1936)	17,200	,, ,,
Coffee (Ethiopia, export) (1937)	14,000	,, ,,
Sesamun (Eritrea, export) (1936)	700	,, ,,
Sesamun (Somaliland, export) (1936)	1,400	,, ,,
Ground nuts (Somaliland) (1936)	1,500	,, ,,
Gold (Eritrea) (1935)	134	kilogrammes
Gold (Ethiopia) (est. annual) over	150	,,



E.N.I.T.]

ERITREA. BRIDGE OVER THE RIVER MAREB

Overseas Trade, merchandise :

Somaliland (1936) : Imports	522,279,000 lire
,, (,,) : Exports	19,685,000 ,,

Ethiopian Empire 1937 :

Imports through Jibuti by rail	85,838 metric tons
Exports ,, ,, ,, ,,	8,139 ,, ,,
Imports from the Sudan	£E.56,090
Exports to ,, ,,	£E.145,031
Imports from Italy	298,848,000 lire
Exports to ,,	72,134,000 ,,

Communications 1937 :

Roads, total completed	1,360 miles
Railways, total open to traffic	717 ,,

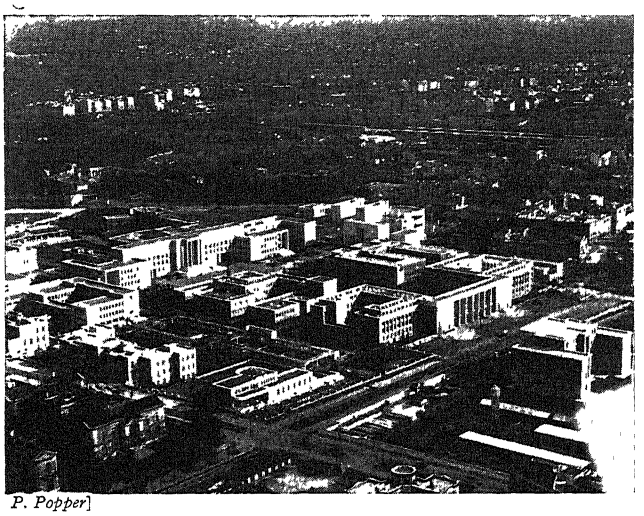
Aeroplanes :

	Arrivals and Departures	Passengers carried	Mail and Freight carried
Addis Ababa	965	5,156	347 metric tons
Asmara	1,314	6,025	523 ,, ,,
Mogadiscio	214	1,145	45 ,, ,,

Shipping, number of passengers :
Eritrea : arrived, 167,549 ; departed, 200,367.
Somaliland : ,, 29,397 ; ,, 46,533.

ITALIAN LITERATURE. The death of G. d'Annunzio (March 2) overshadowed most literary events of the year 1938, and occasioned the publication of countless articles, in many of which an attempt is made at assessing the value of the dead poet's work. It is still too early to forecast the ultimate judgment of criticism, but it is meanwhile interesting to discern that, apart from rhetorical and emotional overstatements, a reaction has set in against the uncompromising strictures of Croce, Flora, and other recent critics. As was to be expected, a good deal of useful biographical material has been brought to light in periodicals. Of more lasting value perhaps is the completion of the national edition of d'Annunzio's works in forty-nine volumes. National—namely officially supported—editions form perhaps the most remarkable editorial activity of present-day Italy: despite the death of its editor, F. Moroncini, the re-issue of Leopardi's *Epistolario* (Florence) is approaching completion; Carducci's works have been fully re-edited (Bologna), and his letters, including the surprising love letters, of which large extracts have appeared in the daily press, are in course of publication. Just before his death (Jan. 18, 1938) V. Rossi brought out the third volume of Petrarch's *Familiarium rerum libri*, which form part of the national edition of his works; other committees are engaged in preparing the official editions of

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P. Popper]
AN AERIAL VIEW OF THE UNIVERSITY CITY, ROME

already on his way to Vienna, telegraphed, "I will never forget this of you".

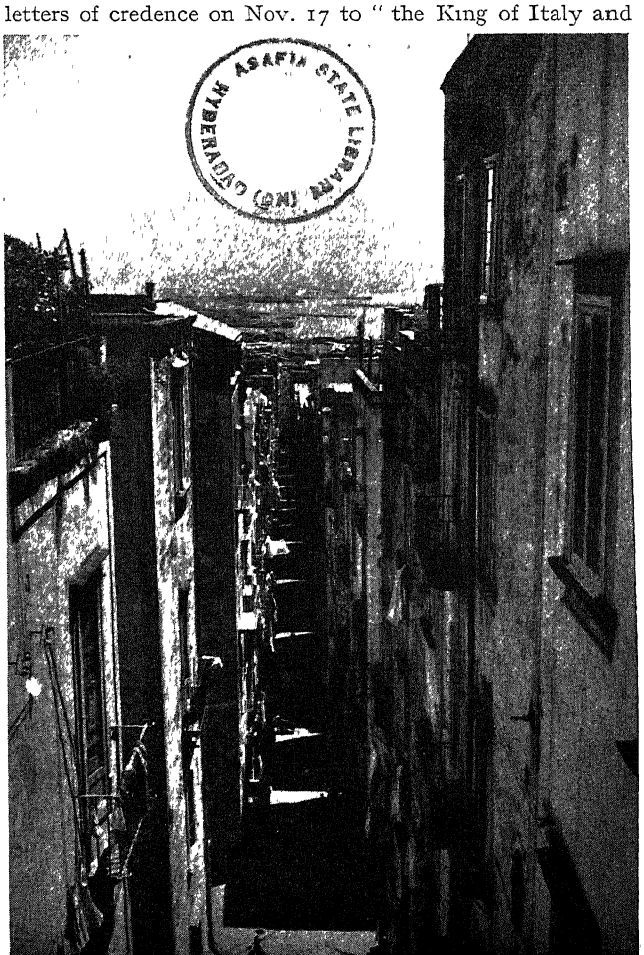
On April 16 Anglo-Italian Mediterranean and Red Sea Agreements and an Italo-Egyptian Agreement of *bon voisinage* were signed on an understanding that they, with relative annexes, would become operative on a date to be fixed after, it was understood, a "substantial" withdrawal of Italian volunteers from Spain had been effected, and when Italian sovereignty in Abyssinia had been recognized England agreed to facilitate *de jure* recognition by the League of Nations.

Herr Hitler was welcomed to Rome by the King and the Duce on May 3. Public feelings of distrust over the *Anschluss* were submerged in lavish demonstrations, including impressive displays of Italy's armed strength in all arms. Incidents in Spain once more obfuscated Anglo-Italian goodwill and re-opened the breach between Italy and France. Europe seemed to be lining up in opposing camps of fascism and democracy; and Mussolini at Genoa on May 15 declared that Italy and Germany would fight together if a "doctrinal war" broke out. When the Sudeten question began to be acute, Italy sided with Herr Henlein. In speeches delivered during early September in northern Italy, the Duce emphasized Italy's military preparedness and pleaded for an "integral" solution of the Czechoslovak problem on the basis of plebiscites for all nationalities. On Sept 22 Signor Mussolini returned to Rome and foreign residents began to leave Italy Although no mobilization order had been published, war was looked on as inevitable on Sept. 28, when a message from Mr. Chamberlain was delivered in Rome inviting Signor Mussolini to support Chamberlain's final appeal to Herr Hitler. A second message on the same day expressed the hope that Signor Mussolini would support a four-power conference which the British prime minister was proposing should be held in Germany. Accepting, Signor Mussolini and Count Ciano entrained for Munich that evening. On his triumphal homecoming Mussolini announced, "At Munich we worked for peace based on justice".

Changed days in central Europe were indicated in the month of October by the decision of Prague and Hungary to submit the Ruthenian frontier dispute to Italy and Germany as sole arbiters.

Italy's casualty list in the Spanish Civil War on Oct. 10 showed 2,657 killed and 8,848 wounded. Ten thousand Italian legionaries embarked at Cadiz for home on Oct. 15, and it was stated that this withdrawal was a unilateral act which had nothing to do with the non-intervention committee's proposals, but that if it suited the committee's requirements, then "so much the better". It was considered sufficient to justify fixing a date for the coming into force of the Anglo-Italian Mediterranean Agreements. British *de jure* recognition of Italian sovereignty was announced to the Italian government on Nov. 16 when the British Ambassador, Lord Perth, presented credentials from King George VI to the "King of Italy and Emperor of Abyssinia".

The Anglo-Italian Agreements signed on April 16 were accordingly declared to be in operation as from Nov 16. The Agreements reaffirmed the Declarations of Dec. 1936 and Jan 1937 (the so-called "Gentleman's Agreement", see *Ency Brit. Book of the Year*, 1938, p. 348) on Mediterranean *status quo*, and provided agreements regarding exchange of military information; cessation of anti-British propaganda in the Near East; settlement of questions in the Red Sea, Arabia, and Abyssinia. They reconfirmed freedom of passage through the Suez Canal in peace and war, provided for the amicable settlement of questions between Egypt, Italy, and Britain; and agreed to the opening of trade negotiations between the British Empire and Italian East Africa This contribution to general appeasement was qualified in the Italian mind with fears concerning the power of opposition forces in England and the impressive growth of British rearmament. It was in an atmosphere of Rome-Berlin-Tokyo consolidation that the new French Ambassador, M. François-Poncet, presented his letters of credence on Nov. 17 to "the King of Italy and


ASAFIA STATE LIBRARY GUJERAT (INDIA)

P. Popper]
LOOKING DOWN A STREET IN NAPLES TOWARDS VESUVIUS.

Emperor of Abyssinia" at the Quirinal Palace. When Count Ciano referred to the "natural aspirations of the Italian people" in course of a Chamber speech (Nov. 30) on foreign affairs, a group of deputies raised an organized shout of "Tunis, Corsica, Nice". This opened a period of anti-French demonstrations staged in all Italian cities. "Jibuti" and "Suez Canal" were added to the cries. Tension was not lessened by a communication from the Italian government to the French ambassador on Dec. 17 revoking the Franco-Italian (Laval-Mussolini) Agreement of Jan. 7, 1935, on the grounds that it had never been ratified. Settlement of the Tunis question, and France's fulfilment of Article 13 of the Secret (1915) Treaty of London were pointedly thrown once more into the melting pot. The year ended with bad feeling between Paris and Rome, but with great expectations in the visit of Mr. Neville Chamberlain and Lord Halifax to Rome, arranged for Jan 11, 1939.

Home Affairs. Mussolini pushed ahead with his established programme of military preparations, "universal training", parliamentary reform on corporative state lines, and economic self sufficiency. To these internal affairs he added something new a racial policy. While drawing sharp distinctions between Italians, the native races of the African Empire, and Jews, the legislative weight of this new policy was anti-Jewish. On military preparation Mussolini told the senate (March 30) that Italy could mobilize nine million men, including from four to five million first-line combatants; that they had 876 war-supply factories employing 580,000 workers preparing for "swift and implacable war"; that they were building four large battleships, and that by 1940-41 they would have eight ships totalling 240,000 tons. It was announced that Italy had 105 submarines, fourteen of which were ocean-going. Twelve more ocean-going types were under construction. Mussolini also told the senate that Italy had "several thousand" first-line aircraft, with 58,000 men constructing more; and that conscription in the air force provided Italy with a possible twenty thousand to thirty thousand pilots. The system of "universal" military training was intensified during the year. On May 6 pre-military training for all boys from the age of eight until conscripted at twenty-one was changed from a voluntary on to a compulsory basis. The co-ordination of the economic life of the country with the political aims of the fascist party was advanced a step on Oct. 8 by the approval of a bill to transform what remained of the old legislature into a new lower-house parliamentary institution called "The Chamber of Fasci and Corporations", to come into operation on expiry of the present XXVIII Legislature in the spring of 1939. This intertwining of the economic and political strands of Italian life was given further impetus by speeding up application of the government's policy of national self-sufficiency. A Supreme Autarchy Commission, set up by Mussolini in 1937, was put into operation on Oct. 10, 1938; and it duly reported that Italy was moving towards self-sufficiency in cellulose, synthetic rubber, and certain mineral oils.

The racial question in Italy made its first appearance early in the year with sporadic newspaper attacks on Jews—attacks which gathered strength until July 25, when the matter became official with the publication of a document on racial policy drawn up by ten Italian university professors. The principal points of their manifesto were that the Italian race was of Aryan origin; that Italian Jews could not be considered as belonging to the Italian race; that the time had arrived when Italians must adopt a racial policy.



Associated Press]
ROME, DEC. 9, 1938. ITALIAN STUDENTS DEMONSTRATE AGAINST FRANCE, DEMANDING CESSION OF TUNIS AND CORSICA

Distinction was drawn between Italian and German racial theories, the fascist authorities asserting that the question must be treated solely from a biological point of view without philosophic or religious distinctions. Pius XI roused fascist anger by referring (July 29) to Italy's racial policy as "an unfortunate imitation of Germany's". Signor Mussolini retorted that the accusation was "simply absurd", and repeated his slogan, "We shall go right ahead".

A decree-law of Sept. 5 dismissed all Jewish professors and school-teachers, and forbade Jews to hold any teaching posts in schools, colleges, and universities. Those of Jewish race were barred from election to the Italian Royal Academy and all other cultural institutions. They were expelled from any such institutions of which they were already members. Provision was made for the opening of Jewish elementary schools. Two days later another decree-law ordered all foreign Jews under 65 years of age, established in Italy since 1919, to leave the country within six months under pain of expulsion; revoked concessions of Italian citizenship made since Jan. 1919; and forbade residential rights to foreign Jews in Italy. In a speech at Trieste (Sept. 18), Signor Mussolini said that Italy's attitude on the Jewish question had been "determined by the attitude of world Jewry, which had shown itself to be the implacable enemy of fascism for sixteen years"; and on Oct. 7 the Fascist Grand Council approved general principles for the "defence of the race" which came into legalized force on Nov. 19. The new laws established that the following were to be considered of Jewish race: anyone born of a Jewish father and mother, even if one of them profess another religion; those with one parent Jewish and the other a foreigner; those of a Jewish mother and an unknown father; those of Italian parents, one of whom showed manifestations of "Hebrewism". By this racial decree Italians were prohibited from marrying anyone of so-called non-Aryan race. Such marriages were to be considered null and void. Civil servants, the military, and party leaders were forbidden to marry foreigners irrespective of race.

No Italian might marry a foreigner without a Home Office permit. Italians living in other countries were not to be considered as foreigners. No Italian Jew could serve in the army in peace or war; nor be a tutor to a non-Jew minor; nor employ or manage more than 100 employees, nor hold a senior position in banks, insurance companies, or exchanges; nor possess land or urban house property over 20,000 lire (about £220—rateable annual value about £55); nor employ Italian servants; nor work in the civil provincial or municipal services. The law provided that exceptions might be made in favour of Italian Jewish families with certain war services, or other specified services to the fascist state. Pius XI, in personal letters (Nov. 12) to King Victor and to Mussolini, pointed out that the new laws prohibiting mixed racial marriages were in opposition to the doctrines of the Catholic Church and in violation of Article 34 of the 1929 Concordat. In a conciliatory reply the King referred to the principles which guided the fascist government and gave assurances that the points brought up in the Pope's letter would receive every consideration

Seventeen foreign correspondents were expelled or asked to leave Italy during the year on some pretext or other; and on Dec. 3 the Italian government issued a ministerial order forbidding Italians to hold office as correspondents of foreign newspapers or agencies, or to act as reporters for foreign correspondents.

Gabriele d'Annunzio died on March 1, and was buried in the grounds of his villa, Il Vittoriale, at Gardone, on Lake Garda.

On Nov. 14 the engagement was announced of the King's youngest daughter, Princess Maria of Savoy, to Prince Luigi of Bourbon-Parma. (I. S. Mu.)

Area and Population (excluding Libya):
Area 119,740 sq. miles.
Population (est. Aug. 31, 1938) 43,818,000.
Chief Towns (pop. 1936): Rome (1,148,948), Milan (1,103,960), Naples (860,176), Genoa (625,355), Turin (623,454).

Ruler. King Victor Emmanuel III.

Language. Italian.

Religion. Christian (Roman Catholic).

Production 1937:

Wheat	8,056,200	metric tons
Barley	223,600	,, ,,
Rye	144,800	,, ,,
Oats	618,200	,, ,,
Maize	3,422,100	,, ,,
Rice	740,200	,, ,,
Potatoes	2,871,800	,, ,,
Beet Sugar	322,500	,, ,,
Wool	13,600	metric tons
Cheese	230,000	,, ,,
Silk, raw	3,201	,, ,,
Coal	969,000	,, ,,
Lignite	1,031,000	,, ,,
Pig Iron	863,000	,, ,,
Steel	2,087,000	,, ,,
Aluminium	22,900	,, ,,
Artificial Silk	48,331	,, ,,

Industry and Labour: (1929 = 100)

Index of Industrial Production (average 1937)	99·6
,, ,, ,, ,, (,, Aug. 1938)	81·3
,, ,, Employment (average 1937)	104·5
,, ,, ,, (,, Aug. 1938)	112·9

Overseas Trade 1937: (excluding trade with colonies)

Imports, merchandise	13,837,000,000 lire
Exports, ,,	10,429,000,000 ,,
Imports (Jan.–Sept. 1937)	10,398,000,000 ,,
,, (,, ,, 1938)	9,475,000,000 ,,
Exports (,, ,, 1937)	7,712,000,000 ,,
,, (,, ,, 1938)	7,517,000,000 ,,

Communications:

Roads, State (Dec. 31, 1937)	12,800 miles
Railways, State (Dec. 31, 1937)	14,200 ,,
Shipping (June 30, 1938), gross tons	3,290,500

Shipping (monthly av. 1937) entered 1,763,000 tons net; cleared 1,751,000 tons net.
Shipping (av. Jan.–June 1938) entered 1,837,000 tons net; cleared 1,771,000 tons net.

Airways (1936), kilometres flown	6,619,700
,, ,, passenger kilometres	36,828,700
,, ,, mail and freight, ton-km.	2,241,000

Finance and Banking:

Revenue, ordinary (est. 1937–38)	20,428,600,000 lire
Expenditure, ,, ,,	17,784,100,000 ,,
Public Debt (Nov. 30, 1935)	108,636,600,000 ,,
Notes in Circulation (Dec. 31, 1937)	18,932,859,540 ,,
Gold Reserve and Credit Abroad (Dec. 31, 1937)	4,028,321,600 ,,
Exchange Rate (average 1937)	93·94 lire = £1 stg.

Education 1936–37 (end):
Public elementary schools 129,580; scholars, 5,037,368.
Private ,, ,, 2,223; ,, 126,228.
Scholars: in secondary schools, 638,207; in universities, 72,944.

Defence Forces. In Sept. 1938, a report estimated the regular Army at 700,000; first line aeroplanes 1,700 and total strength of planes 5,000. An official report, issued in Nov. 1938, gave the active strength of the Navy as 2 battleships, 19 cruisers, 40 destroyers, 32 torpedo boats, 102 submarines, and 82 special and auxiliary ships.

Motor Vehicles licensed (Dec. 31, 1937): cars, 318,338; lorries, 108,348; motor-cycles, 178,645.

IVORY COAST: *see* French West Africa and the Sahara.

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JAMAICA. Sir Edward Denham, Captain General since 1934, died in Kingston on June 2, 1938. He was succeeded in August by Sir Arthur Richards, Governor of Fiji. Government was in the meantime administered by the Hon. Charles Woolley, who was in August succeeded as Colonial Secretary by the Hon. A. W. G. Grantham.

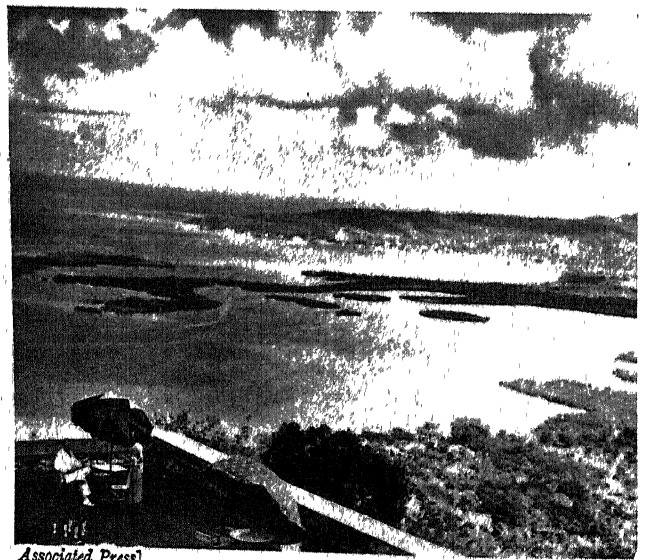
Industrial unrest, due in some measure to under-employment and the stoppage of outlets for emigration, manifested itself in May on the Frome Estate, where a new sugar factory was being built. The trouble spread, and in all 8 persons were killed, 32 wounded, and 139 otherwise injured. A Conciliation Committee was set up, and the disturbances were investigated by local commissions. They were also a direct cause of the sending out of the West Indies Royal Commission which, under the chairmanship of Lord Moyne, spent over three weeks in the Island in November, hearing evidence from officials, representative bodies, and individuals regarding social and economic conditions. Intermittent strikes continued.

A government loan of £1,300,000 3½ per cent stock, 1935-59, was authorized, the proceeds being required for public and municipal works and land settlement; and progress was made with a land settlement scheme, estimated to cost altogether £650,000.

Jamaica's sugar crop for 1937-38 amounted to 118,118 tons, of which 12,810 tons formed the local consumption quota. In 1938 the sugar export quota allowed under the International Agreement was increased to 102,000 tons; the island was thus left with a surplus of 2,278 tons. At the end of the year it was estimated that the 1938-39 crop would be approximately 115,000 tons. Banana exports in 1938, at 23,811,337 stems, showed a decrease of over three million stems from the record figures of 1937. Leaf spot disease caused anxiety.

A serious railway disaster occurred near Balaclava on July 30, when a train carrying 200 passengers to Montego Bay was derailed, 33 being killed and 81 injured.

The Maroons, descendants of runaway slaves in the Cockpit Country, celebrated in March the bicentenary of the signing of their peace treaty with the British authorities. An expedition from Oxford University visited the Cayman Islands in the spring to study biological, botanical, entomological, and zoological features. The Turks Islands salt harvest was good, but was threatened by Bahamian competition enjoying certain advantages. A new mail service between Grand Turk and Halifax was started. (A. A.)



Associated Press]

MONTEGO BAY, JAMAICA

Area and Population:

Area: Jamaica, 4,450 sq. miles; Turks and Caicos Is., 166 sq. miles; Cayman Is., 100 sq. miles; total, 4,710 sq. miles.

Population (est. Dec. 31, 1936): Jamaica, 1,138,558 (blacks 660,420, whites 14,476); Turks and Caicos Is., 5,300 (coloured 97 per cent); Cayman Is., 6,700 (whites 2,604, coloured 3,162).

Chief Town (capital): Kingston 115,000 (Jamaica).

Governor. Sir A. F. Richards, K.C.M.G.

Language. English.

Religion. Christian.

Production 1937: (export figures)

Bananas	£2,650,883	Grapefruit	£12,313
Sugar	£864,570	Oranges	£70,149
Rum	£266,051	Ginger	£70,002
Coffee	£140,019	Pimento	£147,181

Tourist trade, annual value . . . c. £400,000

Overseas Trade 1937:

Imports: Jamaica, £6,138,379; Dependencies, £52,976.
Exports: Jamaica, £4,004,281; Dependencies, £40,456.

Communications 1937:

Roads, motor: Jamaica, 2,484 miles; Cayman Is., 41 miles.
Railways, open to traffic . . Jamaica, 210½ miles
Shipping, Jamaica, net tonnage: entered, 4,641,300; cleared, 4,652,412.

Finance and Banking:

Jamaica (est. 1938-39): revenue, £2,457,469; expenditure, £2,564,709.
Turks and Caicos Is. (1938): revenue, £12,724; expenditure, £10,032.
Cayman Is. (1937): revenue, £17,410; expenditure, £16,648.
Public Debt (1937): Jamaica, £4,604,477; Turks and Caicos Is., £1,799; Cayman Is., £3,600.
Notes in circulation, Jamaica (Dec. 31, 1937): Government, £114,807; private banks, £325,910.
Currency: sterling.

Education, primary, 1937:

Jamaica: schools, 806; scholars, 152,330.
Turks and Caicos Is.: schools, 11; scholars, 838.
Cayman Is.; schools, 13; scholars, 1,010.

JAMMU AND KASHMIR. An important frontier State, lying between India and Central Asia, and more generally known as Kashmir. Area 84,516 sq. miles; population 3,650,000; ruler Maharaja Sir Hari Singh, with a 21-gun salute. This beautiful mountainous land, a paradise for sportsmen, comprises Jammu, Kashmir, Ladakh, Gilgit and Baltistan; while the feudatory chieftainships of Hunza, Nagar, and Chitral adjoin it. The recent unrest among the down-trodden Moslem peasantry is being met by some abatement of their grievances.

JAPAN, an Empire in the Western Pacific, capital, Tokyo;

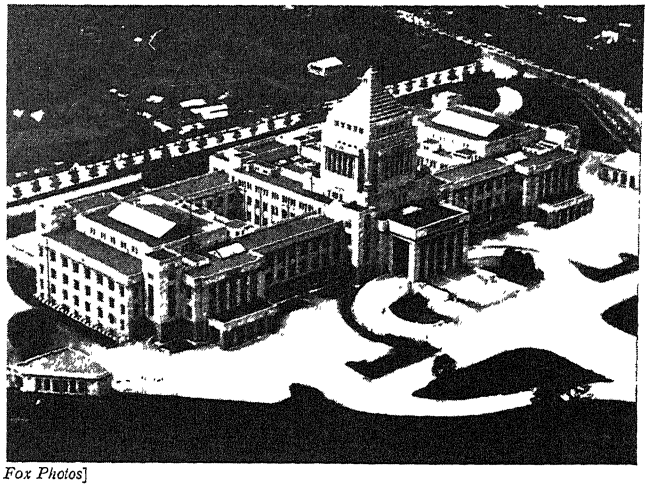
ruler, Emperor Hirohito, premier, Prince Fumimaro Konoye (succeeded in Jan 1939 by Count Kiichiro Hiranuma). It consists of a chain of islands stretching from South Sakhalin (50° N latitude) to the South Seas mandated islands (which lie near the equator) and of the Korean peninsula, on the mainland of Asia, and the small Kwantung leased territory, with the city of Dairen, on the Liaotung peninsula. Japan proper consists of the four main islands of Honshu, Hokkaido, Shikoku, and Kyushu, while Korea, Formosa, and South Sakhalin are administered as colonies. This is also true of the South Sea islands, which were granted to Japan under a mandate from the League of Nations after the World War. The total area of the Japanese Empire is 263,359 sq. miles, of which Japan proper accounts for 178,756 sq miles Population of the Empire (census, Oct. 1, 1935) was 97,697,555, divided as follows: Japan proper, 69,254,148, Korea, 22,899,038, Formosa, 5,212,426; Kwangtung Province and South Manchuria railway zone, 1,656,726; South Sakhalin, 331,943; South Seas mandated islands, 102,537 By the end of 1938 the population of the Empire was in excess of 100 millions, that of Japan proper being estimated at 72,222,700 in Oct. 1938. Population of leading cities (estimates of 1938): Tokyo 6,457,600, Osaka 3,320,000; Nagoya 1,220,000; Kyoto 1,150,000; Kobe 960,000; Yokohama 770,000.

The Japanese Imperial Diet is bicameral, consisting of a House of Representatives, elected by universal suffrage, and a House of Peers. There is little difference between the two traditional large parties of Japan, the Minseito and the Seiyukai, as regards political programme. The former is stronger in the towns, the latter in the country districts. During the period of twelve or thirteen years after the World War when parliamentarism was at its height in Japan, the Minseito was considered somewhat more liberal in internal and international policy and more orthodox in finance than the Seiyuaki; but the march of events has largely obliterated the former issues between these parties. Under the influence of the war with China any tendency towards moderate socialism has been scrapped for a programme of Pan-Asianism and close co-operation with the army.

Education and Religion. There were 47,750 schools of all kinds in Japan in 1936, with 14,949,792 students. Elementary education is compulsory, and the percentage of attendance among children of school age is 99·58. Japan has 45 universities with 71,607 students. Freedom of religion is guaranteed by the Constitution. The latest official statistics (end of 1933) reveal 41,127,307 Buddhists, 16,525,840 Shintoists, and 439,444 Christians in the country.

Army and Navy. The Japanese army is raised on a basis of universal liability to service of all male Japanese between the ages of seventeen and forty. Its peace-time strength has been officially stated at about 230,000, organized in seventeen divisions. All details of numbers and organization have been kept secret since the outbreak of the Sino-Japanese war. Secrecy has also been the rule as regards the Navy since the lapse of the Washington Naval Treaty after an abortive conference at London in Dec. 1936 and Jan. 1937. Japan had given the required two years' notice of the denunciation of the Treaty at the end of 1934. (*See* also ARMIES OF THE WORLD; NAVIES OF THE WORLD.)

Banking and Finance. The unit of currency is the yen (worth approximately 1*s.* 2*d.* at the end of 1938). The ordinary budget for 1938–39 (the Japanese fiscal year runs from April to April) called for the expenditure of



Fox Photos]

IMPERIAL DIET BUILDING, TOKYO

2,867,796,855 yen and was slightly larger than the budget for 1937–38. There was a supplementary appropriation of 4,850 million yen (destined to be covered by new bond issues, except for some 400 million yen, covered by additional taxation) to provide for the expenses of the "China Incident", as the war in China is officially called. The actual appropriation of funds for the war in 1937 and in 1938 was somewhat below the authorized figures. The Japanese national debt by the end of Oct. 1938 stood at 15,524,209,000 yen, as against 9,850 million yen at the end of 1936. Much the greatest part of this debt is internal, Japan's foreign debts amounting to about 1,300 million (pre-devaluation) yen. The actual value of the foreign debt, in terms of present-day Japanese currency is somewhat greater, because almost the whole of Japan's foreign debt is in sterling and dollars and the yen has depreciated more than sterling or the dollar.

Trade and Communications. Exports from Jan. 1 until Nov. 10, 1938, were 2,382,476,000 yen (2,856,629,000 yen for same period in 1937); imports were 2,371,595 (previous year 3,530,163,000 yen)

There were 14,612 miles of government and private railways on Dec. 31, 1935, in Japan proper, besides 2,782 miles in Korea, 935 miles in Formosa, and 300 miles in South Sakhalin. The total number of registered steamships in the Japanese Empire on Sept. 30, 1937, was 4,518, with a tonnage of 4,617,183. The number of sailing ships was 17,494, the tonnage 1,010,893. Japan had 235 commercial aeroplanes on Oct. 1, 1935. Air routes link up the main cities of Japan proper and regular air service is maintained between Japan proper, Formosa, the South Sea islands, Korea, and Manchukuo. Air lines connecting Japan with such Chinese cities as Peking, Tientsin, Shanghai, Nanking, and Tsingtao were instituted in 1937 and 1938 During the year 1935–36 Japan's aeronautical companies carried 11,877 passengers, 75,643 kg. of goods and 265,564 kg. of mail. There were 10,570 telegraph stations in Japan proper in 1937, and 11,920 post offices. There were 261,390 miles of telegraph lines, handling about 67,500,000 messages annually. In Sept 1937 there were 5,467 telephone exchange offices in Japan proper, with 956,330 subscribers.

Agriculture, Manufactures, and Mineral Production. There were 5,597,465 farm households in Japan at the end of 1936. This figure shows little tendency to change from year to year. Much the most important crop in Japan was rice, with the breeding of silk-worms as a secondary source

of income for farmers in some parts of the country. Other agricultural products were wheat, rye, barley, oats, potatoes, and sweet potatoes. Animal husbandry plays a minor role and has mainly developed in Hokkaido, northernmost of the large Japanese islands. At the end of 1936 there were in Japan 1,431,020 horses, 1,770,038 cattle, 1,110,000 swine, 611,040 sheep, 202,000 goats, and 51,260,000 fowls. The rice crop for 1938 was estimated at 64,758,070 koku, a koku being equivalent to 4·96 bushels. This was slightly lower than the crop for 1937 but slightly higher than the average rice crop for the preceding five years. In the main, however, Japan is scantily supplied with natural resources, being notably deficient in mineral wealth, except for coal and copper, and only moderately supplied with these. Its industries have been built up on a basis of importing minerals and raw materials from abroad and working these up as manufactured goods for domestic use or for export.

During the latter part of 1937 and 1938 the war with China introduced drastic changes into the normal pattern of Japan's economy. Foreign trade and transactions in foreign exchange were placed under rigid State control. The government's policy was to stint domestic consumption of imported manufactures and raw materials to the utmost, in order to be able to purchase munitions and war materials. Up to the outbreak of the war, which has caused a recession in the output of most of the peace-time industries, while promoting a boom in munitions and other war industries, Japan led the world in the production of rayon. Japan in 1937 was the leading exporter of cotton textiles, exports of cotton cloth amounting to 2,061,751,000 sq. yards. This was 1·7 per cent less in volume, but 19·7 per cent more in value than the figures for 1936. Japan's most striking gains in recent years have been in such heavy industries as metallurgy, machine-building, and chemicals; and the war has accentuated this tendency. Japan ranks fourth in the world as a producer of chemicals. The value of its output of machinery and tools was 1,874 million yen in 1937, as against 410,133,000 yen in 1931 and 1,458 million yen in 1935. Other important industries are the generation of electrical power, foodstuffs, wood products, paper, and ceramics. Mining output has been increasing under the stress of industrial demand. In 1936 Japan produced 38,067,000 tons of coal, as against 34,904,000 tons in 1935; 78,114 tons of copper, as against 69,289 in 1935; 21,114 kg. of gold, as against 17,837 kg. in 1935; 38,204,620 hectolitres of petroleum products, as against 34,904,000 hectolitres in 1935. Publication of many industrial and mining statistics ceased in 1937 as a matter of war secrecy.

(*See* also SINO-JAPANESE WAR; RUSSO-JAPANESE BORDER CONFLICT.)

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(W. H. CH.)

JAVA, the most important island of the Netherlands Indies (*q.v.*), celebrated for several days the glad tidings that a princess had been born to the House of Orange on January 31, 1938. At 5.15 p.m. on that day the Antea siren sounded in Batavia, the capital of the island, a salute was fired, and above circled a D.H. Dragon of the Royal Netherlands Indies' Airways (K.N.I.L.M.) line with two orange streamers. Much enthusiasm also prevailed throughout the colony in September during the festivities arranged in honour of the forty years' jubilee of the reign of Queen Wilhelmina.

With about 800 inhabitants to the square mile, Java is reputed to be the most densely populated area in the world, and during 1938 the authorities organized a systematic campaign on modern lines for the more effective distribution of the people. Spontaneous emigration was encouraged to the southern and eastern parts of Borneo, also to the Celebes. The aim is to form a nucleus of colonists in new areas which will ultimately attract more settlers. Satisfaction was expressed at the coming into effect of anti-usury laws, regulating, for the first time, the activities of money-lenders. Another measure, extending the Crisis Labour Ordinance, which governs the obligations of employers to send home workers employed, or recruited, outside the country, also came into force. During the year the Archbold expedition left Java to survey New Guinea by aeroplane.

Area and population (*see* also NETHERLANDS INDIES):

Area (including Madura): 51,032 sq. miles.
Population (including Madura): 41,718,364 (Europeans and Japanese, 192,571).
Chief Towns: Batavia (533,015); Sourabaya (341,075); Semarang (217,796); Bandoeng (166,815). (G. B.)

JAZZ. During the year 1938, the type of music known as jazz continued to develop as an elaborate, and often fascinating, distortion of rhythm, melody, and harmony, under the conglomerate name of Swing. Creative ability still remains subsidiary to the gifts of arrangement and improvisation. The decorative patterns and technical tricks have all been used repeatedly and monotonously, but the "jitterbugs", as the abject slaves of hot jazz like to be called, still gape at the pyrotechnics of popular musicians, and give their clumsy but sincere physical response to the overwhelming beat of fox-trot time.

Strangely enough, the modern style of jazz, known as swing, seems to create the desire to listen and applaud, rather than to dance to its rhythm. On the actual dance-floors the old-fashioned Viennese waltz has returned to considerable popularity, and there is a growing interest in such folk-dance specialties as the Lambeth Walk. The "Yam" achieved some popularity through its introduction by Fred Astaire and Ginger Rogers in the film *Carefree*, and toward the end of the year the official approval of Mrs. Franklin D. Roosevelt brought a measure of success to the so-called "Eleanor Glide".

An interesting counter-irritant to the noise of swing has been supplied by the definite vogue in the United States of Hawaiian music, mostly under the leadership of Ray Kinney, Harry Owens, and Lani McIntyre, with Don McDiarmid, and "Giggy" Royse contributing their share within the actual territory of the islands. The soft smoothness of the hula tunes would seem the modern representative of the "sweet jazz" that gradually overcame the raucousness of the early 1920's.

The arranger and interpreter still figure more prominently than the composer of popular music, on the whole, although it is the band-leader who continues to get most of the credit as well as the cash. Frank Churchill would hardly be recognized as the creator of the enormously successful *Snow White* music, but the names of Berlin, Kern, Porter, Schwartz, Rainger, Gordon, and Revel are still well known to the public that sings and dances to their tunes.

JEWS, DISTRIBUTION OF. For the following reasons it is difficult to ascertain the exact number of the Jews (according to religion) at a given year on the basis of the official census figures.

(*a*) In various countries, such as Iran, Yemen, Brazil, no census at all has so far been taken.

(*b*) In some other countries, for instance, England, France, Belgium, United States of America, Argentina, the census does not indicate the religion of the inhabitants

(*c*) The last census available was not made in the same year in all countries, but in different years from 1921 to 1936.

We, therefore, have either to rely entirely on estimates (as in cases *a* and *b*), or to complete the last census figures by estimates mainly based on data regarding natural increase and migration since the last census, in order to find out the number of Jews in every country at the end of the year 1938. These numbers are given in the following table in the last column. The population figures (Total and Jewish) are generally based on the last official census; estimates are marked by an asterisk.*

THE WORLD DISTRIBUTION OF THE JEWS ACCORDING TO THE LAST CENSUS OR ESTIMATE

No.	State	Total Population		Jewish Population			Estimated Number of Jews at the End of the Year 1938
		Year	Number	Year	Number	Per cent of Popul.	
	I. EUROPE						
1	POLAND	1931	32,183,500	1931	3,113,000 [1]	9·7	3,325,000 [1]
2	RUSSIA IN EUROPE.						
	(*a*) Ukraine	1926	29,018,187	1926	1,574,428	5·4	1,700,000
	(*b*) White Russia	1926	4,983,240	1926	407,059	8·2	400,000
	(*c*) Central Russia	1926	82,045,623	1926	588,843	0·7	950,000
	Total	1926	116,047,050	1926	2,570,330 [2]	2·2	3,050,000 [2]
3	RUMANIA	1930	18,052,896	1930	758,226	4·2	800,000
4	GERMANY (including Saar-district)	1933	65,988,491 [3]	1933	503,720 [3]	0·8	475,000 [3]
	Austria	1934	6,760,263	1934	191,481	2·8	
5	HUNGARY	1930	8,688,319	1930	444,567	5·1	510,000
6	GREAT BRITAIN AND N. IRELAND	1931	46,189,445	1931	300,000 *	0·6	350,000
7	CZECHOSLOVAKIA:						
	(*a*) Bohemia	1930	7,109,376	1930	76,031	1·1	85,000 [4]
	(*b*) Moravia and Silesia	1930	3,565,010	1930	41,250	1·2	40,000
	(*c*) Slovakia	1930	3,329,793	1930	136,737	4·1	90,000 [5]
	(*d*) Carpatho-Ukraine	1930	725,357	1930	102,542	14·1	75,000
	Total	1930	14,729,536	1930	356,830	2·4	290,000
8	FRANCE	1936	41,905,968	1935	260,000 *	0·6	280,000 [6]
9	LITHUANIA (without Memel district)	1923	2,028,971	1923	155,126	7·6	165,000
10	NETHERLANDS	1930	7,935,565	1930	111,917	1·4	120,000
11	LATVIA	1935	1,950,502	1935	93,406	4·8	95,000
12	GREECE	1928	6,204,684	1928	72,791	1·2	75,000
13	YUGOSLAVIA	1931	13,934,038	1931	68,405	0·5	75,000
14	BELGIUM	1930	8,092,004	1931	60,000 *	0·7	75,000
15	EUROPEAN TURKEY	1935	1,266,132	1927	51,726	0·5	50,000
16	ITALY	1936	42,527,561	1931	47,825	0·1	50,000 [7]
17	BULGARIA	1934	6,090,215	1926	46,431	0·8	50,000
18	SWITZERLAND	1930	4,066,400	1930	17,973	0·4	22,000
19	SWEDEN	1930	6,141,571	1930	6,653	0·1	10,000 [8]
20	DANZIG	1929	407,517	1927	9,239	2·4	5,000
21	DENMARK	1935	3,706,349	1921	5,690	0·2	7,000
22	ESTONIA	1934	1,126,413	1934	4,566	0·4	5,000
23	IRELAND	1936	2,965,854	1926	3,686	0·1	5,000
24	SPAIN	1930	23,563,867	1930	4,000 *	0·0	4,000
25	RHODES	1934	56,754	1930	3,886	7·1	4,000
26	PORTUGAL	1930	6,825,883	1931	1,200 *	0·0	3,000
27	MEMEL DISTRICT	1936	150,893	1936	3,000 *	2·0	3,000
28	LUXEMBURG	1930	299,993	1930	2,242	0·7	2,000
29	FINLAND	1930	3,667,067	1930	1,782	0·1	2,000
30	NORWAY	1930	2,814,194	1930	1,359	0·1	1,000
31	GIBRALTAR	1931	21,372	1931	1,000 *	4·7	
					Total in Europe		9,908,000

* As sources for estimates, the following have been used: (*a*) For the total population: *The Statistical Year-Book of the League of Nations, 1937–38* (Geneva, 1938); *The Statesman's Year-Book, 1938* (London, 1938). (*b*) For the Jewish population: *The American Jewish Year-Book, 5698 = 1937–38* (Philadelphia, 1937); *The English Jewish Year-Book, 5698 = 1937–38* (London, 1937); other sources, as indicated in each case in the annotations (investigations and inquiries of the author marked with **).

[1] The Polish census of 1913 does not include the Jews serving in the army, estimated at 25,000. Since the census of 1931, the Jews in Poland had a natural increase of about 280,000, and lost about 90,000 by excess of emigration over immigration.

[2] The figures for Russia do not indicate the religion of the inhabitants, but only their national, *i.e.* ethnic, attachment as declared by every person himself. While, therefore, in all other countries a person was considered a Jew if he was of Jewish religion, in Soviet Russia the adherence to the Jewish nationality was the decisive factor for his being counted as a Jew. In this way a large number of persons in Russia, although affiliated, either themselves or through their parents, with the Jewish religion, were, nevertheless, registered in the census as Russian or Ukrainian. It is not known how many have changed nationality since the census of 1926.

[3] The census figures for Germany include the inhabitants of the Saar district, re-incorporated into Germany in 1935. Since the census of 1933 till the end of 1937, about 110,000 Jews left Germany; besides, there was a natural decrease of about 25,000. In 1938 another 30,000 Jews left Germany, and the natural decrease was 5,000. In Austria attached to Germany in March 1938 the 180,000 Jews had dropped by the end of 1938 to 140,000 by emigration (35,000) and natural decrease (5,000).

[4] In 1938, about 70,000 Jews left the districts ceded to Germany and Poland, and migrated to other parts of Czechoslovakia.

[5] In Oct. 1938, by the cession of some parts of Slovakia to Hungary, about 25,000 Jews passed to Hungarian rule.

[6] A. Menes (*Judische Rundschau*, Berlin, June 4, 1937) estimates 270,000 Jews in France, in 1937; since, *c.* 10,000 immigrated.

[7] According to an investigation carried through by the Italian government in Aug. 1938, Jews amounted to 57,000, among them 12,000 foreign Jews, ordered to leave Italy by March 1939. [8] Estimate by Dr. M. Ehrenpreis, Grand Rabbi, in Stockholm.

THE WORLD DISTRIBUTION OF THE JEWS ACCORDING TO THE LAST CENSUS OR ESTIMATE

No	State	Total Population		Jewish Population			Estimated Number of Jews at the End of the Year 1938
		Year	Number	Year	Number	Per cent of Popul	
	II. AMERICA						
1	United States	1930	122,775,046	1927	4,228,000 * [9]	3 5	4,700,000
2	Argentina	1935	12,402,068 *	1934	253,000 [10]	2 0	275,000
3	Canada	1931	10,376,786	1931	155,614	1 5	175,000
4	Brazil	1930	40,273,000	1935	50,000 **	0 1	55,000
5	Uruguay	1931	1,903,083	1935	20,000 **	0 5	25,000
6	Mexico	1930	16,522,722	1935	20,000 *	0·1	20,000
7	Cuba	1931	3,962,344	1933	7,800 *	0 2	10,000
8	Chile	1930	4,287,445	1935	9,000 **	0 9	10,000
9	Colombia	1928	7,851,000	1935	3,000 **	0·04	4,000
10	Peru	1936	6,500,000 *	1935	2,500 *	0·04	3,000
11	British Guiana	1931	310,933	1925	1,786 *	0 6	2,000
12	Jamaica	1935	1,121,823 *	1935	2,000 *	0 2	2,000
13	Dutch Guiana (Surinam)	1935	231,489	1934	800 *	0·4	1,000
14	Curacao	1935	79,395	1933	566	0 7	1,000
15	Paraguay	1935	926,580 *	1935	1,000 **	0·01	1,000
16	Venezuela	1926	3,026,878	1926	882	0 03	1,000
17	Other Parts of America	—	—	—	—	—	1,000
					Total in America	. .	5,286,000
	III. ASIA						
1	Palestine	1931	1,035,154	1931	175,006	16 9	440,000 [11]
2	Asiatic Russia	1926	30,980,865	1926	109,851	0 4	130,000
3	Iraq	1934	3,561,000	1934	100,000 **	2·8	100,000
4	Iran	1935	15,000,000 *	1935	50,000 [12]	0 3	50,000
5	Syria and Lebanon	1935	3,630,000	1932	16,588 [13]	0·5	15,000
6	Yemen	1935	1,000,000 *	1935	50,000 [14]	5 0	50,000
7	Asiatic Turkey	1935	14,935,000	1927	30,146	0 2	25,000
8	India	1931	352,837,778	1931	24,141 [15]	0·0	25,000
9	China	1936	422,707,868 *	1935	9,000 *	0·0	9,000
10	Manchukuo	1934	30,504,689 *	1934	8,000 *	0 0	8,000
11	Afghanistan	1935	7,000,000 *	1935	5,000 *	0·1	5,000
12	Aden	1931	48,338	1931	4,000 *	8·8	5,000
13	Japan	1935	99,354,281	1930	2,000 *	0·0	2,000
14	Philippines	1935	13,264,000	1934	500 *	0·0	1,000
15	Straits Settlements	1931	1,114,012	1931	1,000 *	0·1	1,000
16	Netherlands Indies	1930	60,727,233	1930	1,095	0 0	1,000
17	French Indo-China	1936	23,030,000 *	1936	1,000 *	0·0	1,000
					Total in Asia	.	868,000
	IV. AFRICA						
1	French Morocco	1936	6,242,706	1936	161,312 [16]	2·5	175,000
2	Spanish Morocco and Tangier	1934	855,202 *	1934	19,918 [16]	2 3	25,000
3	Algiers	1936	7,234,684	1931	110,127 [16]	1·5	130,000
4	British South Africa	1936	9,588,665	1926	71,816	0·9	100,000 [17]
5	Tunis	1936	2,608,313	1931	56,248 [16]	2·3	70,000
6	Egypt	1937	15,904,525	1927	63,550	0 4	70,000
7a	Tripoli } Libya	1936	} 889,999	1931	21,342	} 2·8	22,000
7b	Cyrenaica }	1936		1935	3,192		3,000
8	Abyssinia (Ethiopia)	1935	5,500,000 *	1935	10,000 *	0·2	10,000 [18]
9	Southern Rhodesia	1935	1,289,000 *	1935	2,500 [19]	0·2	3,000
10	Other Parts of Africa	—	—	—	—	—	1,000 [20]
					Total in Africa	. .	609,000
	V. AUSTRALIA						
1	Australia	1933	6,629,839	1933	23,553	0·4	26,000
2	New Zealand	1936	1,573,810	1926	2,591	0·2	4,000
					Total in Australia	. .	30,000
					Total in the whole World .	. .	16,701,000

[9] According to H. S. Lindfield (*The Jews in the United States* (New York, 1927)). Since 1927 there has been a Jewish immigration of about 90,000 and a natural increase of about 380,000.

[10] According to Dr. Simon Weil, Director of the Jewish Colonization Association, in Buenos Aires.

[11] The Palestine government estimates the number of Jews at the end of 1937 at 395,836; to this figure are to be added 20,000 to 30,000 not officially registered Jewish immigrants who arrived during 1931–37. The excess of Jewish immigration over emigration in 1938 was about 10,000 and the natural increase 8,000.

[12] Mean between estimates of *The Statesman's Year-Book* (40,000) and of Dr. A. J. Braver, Jerusalem (52,000 to 62,000 in 1935).

[13] The 1932 census in Lebanon gave 3,588; in Syria the number was estimated, at the same time, at 13,000. Since 1932, the latter figure has decreased by emigration.

[14] Based on inquiries from Yemenite Jews in Jerusalem and Aden.

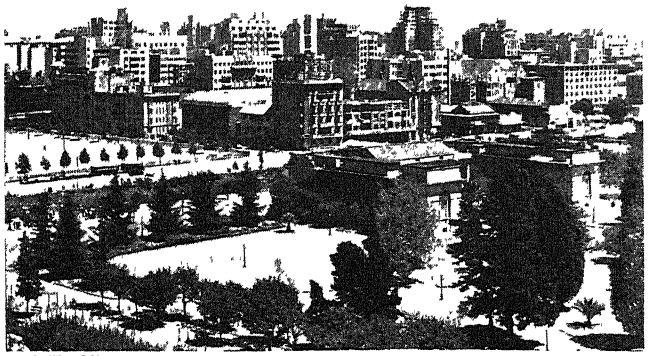
[15] Including about 10,000 B'nai Israel in Bombay and surroundings, and about 1,500 black Jews in Cochin.

[16] Native Jews only. European Jews: Fr. Morocco 12,000, Sp. Morocco and Tangier 5,000, Algiers 10,000, and Tunis 10,000.

[17] The South African Jewish Board of Deputies estimated, in 1937, Jews at 95,000, forming 4·7 per cent of the *white* population.

[18] Falashas (black Jews). [19] Estimate of Dr. M. Wischnitzer, Berlin. [20] About 500 in North Rhodesia, 250 in Kenya.

(A. RU.)



Wide World]

A VIEW OF JOHANNESBURG

JOHANNESBURG. The largest city and the most important commercial centre in the Union of South Africa, it owes its growth to the Witwatersrand gold-mining industry The municipal area covers some 83 sq. miles, and is said to be among the largest in the British Empire. The remarkable development of the city continues, although there has been some slackening in building plans owing to a decrease in business activity The problem of providing better accommodation for the coloured and native population is to be met by the construction of new quarters : the Orlando non-European township is to provide for a population of some 80,000, but adequate housing is yet to be created for some 10,000 Asiatics and 23,000 Eurafricans. Expenditure on non-European housing is over £1 million and the council is committed to a further expenditure of £500,000.

The total indebtedness of the city is £10,528,000, and sinking funds total £1,592,345. Recent building developments include a power station, costing £1,500,000, new reservoirs, extensions to the city hall, and some skyscrapers erected by private enterprise (J. L. K)

JOHN, AUGUSTUS (1879–), British painter and etcher, of whom an account will be found in the *Ency. Brit.*, vol. 13, p. 92, after attending the Slade School and working in France, was for a short time (1901–02) an art teacher at University College, Liverpool. Settling in London, he quickly made a name, chiefly for large-scale decorative work, and during the World War was official artist to the Canadian Army, later painting portraits of many of the participators in the Paris Peace Conference. Works of his were soon acquired by national and other public galleries, and in 1921 he became A.R.A , in 1928 R.A., and in 1933 a trustee of the Tate Gallery. In March 1938, H M. the Queen purchased one of his series of portraits of Bernard Shaw—another of which has long been at the Fitzwilliam Museum, Cambridge—and a month later Mr. John created a sensation by resigning from the Royal Academy on account of the rejection by the selection committee of Mr. Wyndham Lewis's portrait of T. S. Eliot, the poet. Mr. John announced that he took this step reluctantly, although he had constantly found himself in disagreement with the Academy's policy and would be " happier and honester in rejoining the ranks " as an artist completely unattached, though he retains his membership of the New English Art Club He subsequently held a very successful one-man show—the first for nearly ten years—and in July an exhibition of banned German art in London

JOHNSTON, SIR REGINALD FLEMING, K C M G., British administrator and scholar, was born in Scotland in 1874, and died in Edinburgh on March 6, 1938 He was educated at the Universities of Edinburgh and Oxford, and entered the Hong Kong civil service in 1898 From 1904 to 1918 he was at Wei-hai-wei, serving successively as Secretary to the Government, Senior District Officer and Magistrate, and Administrator of the Government From 1919 to 1925 he was tutor to Pu Yi, ex-emperor of China and the present Emperor Kang Teh of Manchukuo. He was Commissioner of Wei-hai-wei from 1927 until control of that territory was transferred to China in 1930 Johnston was one of the finest Chinese scholars Great Britain has produced, and from 1931 to 1937 he was professor of Chinese at the School of Oriental Studies, London University. Among his publications were *Buddhist China* (1913), and *Twilight in the Forbidden City* (1934), which recorded his experiences as Pu Yi's tutor.

JONES, ADRIAN, British sculptor and soldier, was born at Ludlow, Shropshire, on Feb. 9, 1845, and died in London on Jan. 24, 1938. He was educated at Ludlow Grammar School, and served with distinction in the Abyssinian War of 1868, the Boer War of 1881, and the Nile Expedition, reaching the rank of captain. His most famous work as a sculptor is the Peace Quadriga on Constitution Hill Arch, London, and he owed much of his reputation to his skill as a modeller of horses. Among his other works were the equestrian statue of the Duke of Cambridge in Whitehall, the Royal Marines' Monument in St. James's Park, the Carabineers' Memorial on Chelsea Embankment, and the Soldiers' National Memorial at Adelaide ; and he also executed portrait statues of Sir Redvers Buller, Earl Kitchener, and others. He was made M.V.O. in 1907.

JUDAISM. The year 1938 will go down as a black year in the annals of Jewish history and culture. It opened with the destruction of Viennese Jewry, that for seven centuries has been an important centre of Jewish learning and life. Only the religious and Jewish cultural aspects of that destruction can here be touched upon. The Jewish Theological Seminary is closed, and its library sacked and transferred to the Nazi Institute for Anti-Semitism at Munich. All Burgenland Jews were expelled, including those of Eisenstadt, the only community in Europe enjoying independent civic self-government since 1690, and formerly the home of leaders of Cabala and of neo-Orthodoxy (Hildesheimer, 1851–69). The contents of its splendid Jewish Museum have been confiscated. The demolition of synagogues began in Munich (June) and Nuremberg (August). In November, 581 synagogues were wholly or partially destroyed, 181 of them by means of bombing ; most of the rabbis were imprisoned, and at the close of the year, religious services had not yet been permitted to be restarted in the synagogues still standing.

The historic Jewish communities in the Sudetenland (numbering 32,000 souls) have all been dispersed. As to Germany proper, it is improbable that the seats of Jewish learning in Berlin, or the renowned Theological Seminary of Breslau, will survive 1938. All religious newspapers have been suppressed ; and the only learned publication still appearing is the *Monatschrift für die Geschichte und Wissenschaft des Judenthums*, now in its 82nd year. Early in the

year, Hertz's *Pentateuch and Haftorahs* appeared in a German edition.

Italy's adoption of Nazi racial legislation means a staggering blow to Jewish culture in that land, where it has had an uninterrupted history of over 2,000 years Shechita has been forbidden , the Theological Seminary at Rhodes has been closed ; and *Israel*, the religious journal, has been suppressed

The spiritual equilibrium in Jewry is being maintained by the rise of Jewish scholarship in English-speaking lands, and by the intensive religious and cultural life in the Holy Land. In England, a Readership in Post-Biblical Jewish Studies has been established in Oxford ; and publications of the year include *Order Moed* in the Soncino Talmud, Roth's *Jewish Contribution to Civilization*, Parkes's *The Jew in the Medieval Community*, the Chief Rabbi's one-volume *Pentateuch and Haftorahs*, his collected *Sermons, Addresses, and Studies*, and Montefiore-Lowe's *Rabbinical Anthology*. In America, there appeared Hoschander's *The Priests and the Prophets*, Finkelstein's *The Pharisees*, and the learned *Annual* of Hebrew Union College.

In Palestine, scholarly activity centres round the Hebrew University. The Peel Commission rightly records : " It is remarkable to find, on the fringe of Asia, a university which maintains the highest standards of Western scholarship ".. Among the mass of poetic, historic, and critical works published, mention may be made of Torczyner's *Lachish*, Zulay's *Piyyute Yannai*, Ezekiel Kauffmann's *History of the Jewish Religion*, L. Roth's *Jewish Ethical and Religious Teachings* (the last two works in Hebrew), and various Schocken publications. An Arabic translation of Hertz's *Book of Jewish Thoughts* should introduce the spiritual ideals of Jewry to the Moslem intelligentsia.

The new diaspora in Latin America is followed by difficult problems of communal adjustment. The rabbinate of Buenos Aires has now been filled, and a series of religious and cultural works are in process of publication.

The following died during the year under review : Prof. S. Alexander (Manchester) ; Rev. A. P. Bender (Capetown) ; Sir Leonard L Cohen (London) ; A. Druyanoff (Tel-Aviv) ; Rabbi Jacob Freimann (Berlin) ; Abraham Walt Liesen (New York) ; Sir Robert Mond (London) ; Dr. C. G. Montefiore (London) ; Felix Warburg (New York) ; Prof. Otto Warburg (Berlin) ; and Louis Zangwill (London).

As is befitting a year which saw the revival of mediæval persecution, it was marked by special Days of Humiliation, Fast, and Prayer (July 17 and Nov. 20), with appropriate liturgies arranged by the rabbinates of the world. (J. H. Hz.)

JUDAISM, LIBERAL. By the death of Claude Goldsmid-Montefiore (*q.v.*), on July 9, 1938, Liberal Judaism lost its outstanding leader and one of its foremost exponents. By his many writings he did much to spread the knowledge and influence of Liberal Judaism in the Jewish community, and beyond it. In his expositions of it, he showed its essence to be a combination—not a mere juxtaposition—of Jewish tradition and modern thought, with a universalist basis and scope.

Largely under the auspices, and with the assistance, of the World Union for Progressive Judaism, Liberal Judaism has in recent years spread to countries where previously it had no organizations : Holland, South Africa, Australia, and Palestine. In the first three countries, it followed the form it has in Germany, England, or America. In Palestine, however, it shows marked divergences. In an environment constituted largely of Jews, the Liberal Jewish principle, that tradition and actual conditions should combine to regulate ritual or ceremonial practices, the externalities of religion, produces different results from those it produces in other environments.

Several factors—Palestine is among them—are inducing a change in the attitude toward traditional religious practices among some of those Liberal Jews who had in the past been indifferent to them That is the case especially in the United States, where the adherents of Liberal Judaism had gone farthest in the neglect of ceremonials. One result of this development seems to be a growing approximation between " Reform " and " Conservative " congregations. Both groups adopt implicitly or explicitly the principle of change. In applying it, however, the first group gives greater attention to the adjustment of ceremonial observances to present thought and circumstances, the other gives the greater attention to the conservation of traditions. In Germany and England there have not been such wide departures from traditional practices as in America, though in England the Liberal Jewish prayer book, especially for the Sabbath Services, of which a new edition was recently published, goes farther than any other Liberal Jewish prayer book in the reconstruction of the liturgy.

The break-up of German Jewry under the Nazi rule has had two effects on Liberal Judaism. In Germany, the country of its origin, where it has long been the predominant form of Judaism, it has, with all other forms of the Jewish religion, lost much of its organized strength through emigration and the material weakness of its remaining adherents. But at the same time, it has spread from Germany to other lands German-Jewish emigrants, wherever they have settled in adequate numbers, attempt to build up their communities on the religious foundations they have known, which for many of them is Liberal Judaism. Congregations of German Liberal Jews have been established in South Africa and in the countries of South America.

There are two small associations of Liberal Jews among the native Jews of India, the B'nai Israel : one in Bombay, and one in Karachi. (I. I. M.)

JUDAISM, ORTHODOX. Orthodox Judaism as a religion is Judaism without qualification. Any Jew to whom the tenets of traditional Judaism do not appeal finds it necessary to apply a qualification to his Judaism, to describe himself as a Liberal Jew or a Reform Jew.

Of the sixteen million or so Jews of the world, about a quarter of a million are members of a Liberal or Reform Jewish community. (The term " Liberal Judaism " is used in the English or American sense. The Liberal Jews of Germany are close to orthodoxy.) East of Berlin, except for one small community in Australia, there is no organized group of Liberal or Reform Jews. Of those who describe themselves as such, the great majority are to be found in North America. Orthodox Jewry falls into two great divisions, the *Ashkenazim* (*c.* 14½ millions) or the Jews originating in Central and Eastern Europe, and the *Sephardim* (*c.* 1,600,000) or the Jews originating in Spain and Portugal. Grouped with the latter are a number of Oriental Jewish communities whose members are not true *Sephardim*, but whose ritual is closer to theirs than to that of the *Ashkenazim*. *Ashkenazim* and *Sephardim* are equally " orthodox " Jews, the differences between them being minor ones of ritual and pronunciation of Hebrew. The real difference is that of local origin. Orthodox Jewry is spread over all countries. Of the 350,000 Jews of Great Britain, well over 340,000 may be counted as orthodox Jews, and in the United States at least four millions of the total of about 4,700,000 may be similarly described. Elsewhere the num-

ber of Orthodox Jews is practically the same as that of the Jewish population. In Palestine a new *Ashkenazi* chief rabbi in the person of Dr. Isaac Herzog, previously Chief Rabbi of the Irish Free State, was appointed. Dr. Moise Ventura was appointed Chief Rabbi of Alexandria in succession to Professor David Prato, who had been appointed to a similar office in Rome. In London the organization of the Jewish community underwent a development by the creation of rabbinical districts under the United Synagogue and the appointment of Dr Isadore Goodman as the first District Rabbi of North-East London. A similar appointment in North-West London is contemplated, and in Manchester the same course has been followed by the appointment of Dr. Alexander Altmann, of Berlin. (A. M. H.)

JUDICIAL DECISIONS. A few of the more notable judicial decisions in the English Courts during 1938 are examined below. For the sake of brevity, the names of cases cited are usually abbreviated. The reports cited are thus abbreviated: L.R. = Law Reports of The Incorporated Council of Law Reporting. A.C. = Appeal Cases, *i.e.* those decided by the House of Lords or by the Judicial Committee of the Privy Council. K.B. = King's Bench. P. = Probate, Divorce, and Admiralty. L.T. = Law Times Reports. All E.R. = All England Reports.

In *The Cristina*, L R. [1938], A.C. 485, the House of Lords gave effect to a well-recognized rule of international law by holding that where a foreign sovereign state (in this case the Spanish government) has requisitioned a ship, the English courts will not allow the owner to arrest the ship in English territorial waters.

In criminal law, *R.* v. *Bourne*, [1938] 3 All E.R. 615, went some way towards solving a vexed medico-legal problem. A girl, aged fifteen years, was *enceinte* as the result of a rape. A distinguished surgeon, without any concealment and in good faith, procured an abortion of the girl for the purpose of preserving her life. It was held that he was not guilty of any offence, and that if a surgeon is reasonably of opinion that the probable consequences of continued pregnancy would be to make the patient a physical and mental wreck, he need not wait until the patient is in peril of immediate death before he performs this operation. Another notable decision was *R.* v. *Bernhard*, L.R. [1938], 2 K.B. 264; a blackmailer has a good defence to demanding money with menaces, if he honestly believes that he is making a lawful claim, although his claim is unfounded in fact and in law.

The chief case on insurance law was *Beresford*, L.R. [1938], A.C. 586. The House of Lords held that the personal representative of a person who, having insured his life, committed suicide while sane, could not recover the policy moneys from the insurance company, even though the company had bound itself to pay if such suicide should occur after the expiring of one year from the commencement of the insurance. It is probable that *bona fide* transferees for value of such policies before suicide has been committed are not affected by this decision.

In matrimonial causes, *Hussein*, L.R. [1938], P. 159, allowed a decree of nullity where the marriage had been induced by the husband's threats to kill the woman unless he married her. On the Matrimonial Causes Act, 1937, it was held in *Germany* [1938], 3 All E.R. 64, that the burden of negativing condonation is on the petitioner in divorce; in *Swettenham*, [1938] 3 All E.R. 183, that divorce for insanity is obtainable even if lucid intervals have recurred before the current attack of the disease; and in *Poulden*, L.R [1938], P 63, that the husband's petition for divorce must be dismissed where there was evidence that the wife's adultery had been facilitated by the connivance of a female inquiry agent employed by the husband, for, under the Act, the burden of disproving connivance is on the petitioner.

In distraint of goods, *Day*, L.R. [1938], 2 K.B. 74, gave its death blow to "walking possession" This was a common practice devised to make things less unpleasant for the tenant whose goods were distrained. The bailiff received his statutory fees for being in possession, although all that he actually did was to keep away from the premises on the tenant's undertaking that the goods distrained should not be removed. This was held to be an unlawful evasion of the Distress for Rent Rules, 1920.

In the law of tort (civil injury), the House of Lords decided in 1937 that where the death of a person has been caused by a tort, damages for "loss of expectation of life" are recoverable for the benefit of his estate. Courts have been greatly puzzled in valuing the "expectation of life" of deceased persons, who may have varied in age from birth to senility, and who may have occupied every conceivable position in the economic scale and in the gamut of health. The decisions of 1938 can only tell them that there is no scientific quantitative test and that they must award what is reasonable on the facts of each case. For a healthy child, aged three years, £90 was regarded as obviously too small, and £1,000 as not too much; *Shepherd*, [1938] 2 All E.R. 587; *Bailey*, [1938] 4 All E.R. 827; and the fact that the deceased person was engaged in a dangerous occupation (*e.g.* seamanship) will reduce damages; *Aizkarai Mendi*, [1938] 3 All E.R. 483.

As to motorists, the courts have experienced difficulty in holding the balance in the tort of negligence beween the driver of a vehicle on the one hand and the pedestrian or the driver of another vehicle on the other hand, at a statutory crossing-place on the highway. The result is that a driver is not liable if, using due care, he collides with another vehicle when the latter has entered the crossing against the traffic signals; *Eva*, L.R., [1938] 2 K.B. 393; nor if he collides with a pedestrian who negligently begins to cross before the vehicle, driven with due care, reaches the crossing; and this probably applies even to a pedestrian who is actually on the crossing and behaves in a foolhardy fashion: *Chisholm*, [1938] 4 All E.R. 850; *Knight*, [1938] 3 All E.R. 309; but not if there has also been negligence on the part of the driver; *Bailey*, L.R. [1938] 1 K.B. 156. It was held in *Ward*, [1938] 2 All E.R. 341, that a fire-engine has no right to disregard traffic signals. In criminal law, no special consideration is due to a driver who is a learner and who has driven without the statutory "due care and attention"; every driver, whether skilled or unskilled, must conform to a standard of care which is objective and irrespective of his personal equation to it; *McCrone*, [1938] 158 L.T. 253. In *Melhuish*, [1938] 4 All E.R. 98, the court quashed the conviction for excessive speed in which the only evidence for the police was the record of their speedometer, the accuracy of which had not been checked; and in *Evans*, L.R. [1938], 1 K.B. 694, it quashed the conviction of a driver who, in rounding a bend, went outside the white line in the middle of the road, and was charged with failure to conform to a "sign" under the Road Traffic Act, 1930; for the line is not a "sign".

On the duties of public authorities the two most important decisions related to the supply of drinking water. In *Barnes*, [1939] 1 K.B. 21, it was held that if such water is supplied through lead pipes, the water company is liable

in damages for injuries caused to consumers by not eliminating the danger of plumbo-solvency or at least warning consumers of it In *Read*, [1938] 4 All E R. 631, the defendant water company was held to have been negligent in not having prevented the infection of the water by typhoid germs, because it had not exercised sufficient care to detect a " typhoid-carrier " among its workmen who were employed in operations on one of its wells. The company was held liable in damages both to a ratepayer and to one of his household for the typhoid fever they had caught through drinking the water (P H W)

Some important points of principle were established by judicial decisions during the year in the United States In *Tennessee Electric Power Co.* v. *Tennessee Valley Authority* (U S. Dist Ct, E D Tenn), suit was brought by eighteen power companies operating in areas affected by the TVA programme, to enjoin further construction of the Norris, Wheeler, and other dams, and their operation by the TVA for the generation and sale of electric power. The Act and the programme of the TVA were held to be within the constitutional powers granted to Congress to provide for national defence, to control interstate commerce, and to dispose of products incidental to the use of government property On the point of admissible evidence, there was the case of *People* v *Kenny* (Queens County Ct., N.Y.) The defendant submitted to a lie-detector test made with a psychogalvanometer at Fordham University, which showed him to be innocent. The district attorney objected to the admission of expert testimony based on data secured by the test. The objection was over-ruled and the testimony received and evaluated by the jury.

Decisions handed down on labour law revealed a certain amount of confusion centring, much of it, round the position and activities of the National Labour Relations Board. The U.S. District Court for the Western District of Missouri held a unionization campaign not to be a labour dispute under the Norris-La Guardia Act. The Circuit Court of Appeals for the 1st Circuit affirmed a preliminary injunction restraining the board's agents from prosecuting an unfair labour complaint while the 4th Circuit Court of Appeals upheld the refusal of a similar injunction sought by the company. The Federal district court for the Eastern District of Illinois held that local unions of Progressive Miners of America were liable for damages suffered by the United Electric Coal Company because of its conspiracy to prevent operations of the company's plant during a strike by means of intimidation and violence An employer was held to be operating contrary to the NLRB Act when acting to keep out union organizers from a company town even though the company owns the buildings, streets, etc. *In re Hallon Fuel Co.* v. *United Mine Workers of America* (Dist. Ct., La.), the State Supreme Court of Minnesota upheld an award for tort damages arising through the obstruction of the highway by pickets. The N.Y. Court of Appeals upheld the validity of a closed shop although it resulted in monopoly of labour In *Hartley* v. *Brotherhood of Railway and Steamship Clerks* (283 Mich. 201), the plaintiff, a married woman, was a member of an unincorporated labour union which in 1921 negotiated a collective agreement with a railroad company, of which she was an employee and under which agreement she acquired a preferred seniority standing. Subsequently, as a result of agitation against the employment of married women during periods when single women were being discharged, the union and the employer by mutual action modified the agreement of 1921 in regard to the seniority provisions, the new agreement providing that married women should be relieved of services irrespective of seniority. As a consequence of this action, plaintiff was dismissed from employment, and brought suit against the union to recover damages The court held that she had no cause of action *Individual Retail Store Owners Association* v. *Penn Treaty Food Stores* established the legality of picketing in a non-labour dispute. The defendants, who had adopted the policy of closing early twice a week, picketed competing stores who maintained the old hours. (B W.)

JUDICIARY, BRITISH. The conduct of business in the law courts of Great Britain has been affected during 1938 by the passing of two important Acts—the Administration of Justice (Miscellaneous Provisions) Act and the Supreme Court of Judicature (Amendment) Act, both of which received the royal assent on July 29.

By the first, the purpose of which was the improvement of administration, some forty acts were repealed in whole or in part, and its chief effects are (1) the relief of judges of assize by extending the jurisdiction of those courts of quarter session, the chairman or deputy-chairman of which is duly qualified; (2) the giving power to an assize judge to determine when an assize should be omitted because of the absence of any substantial business; and (3) the simplification of the Crown Office rules and the abolition of the obsolete and archaic outlawry proceedings. At the passing of the Act, 33 of the 136 chairmen and deputy-chairmen of quarter sessions were not legally qualified; a strong effort to make legal qualification obligatory was negatived, but the Attorney-General gave the assurance that if counties failed without reasonable cause to obtain such chairmen, the Lord Chancellor would consider asking parliament for further powers.

The Supreme Court of Judicature (Amendment) Act, introduced on June 20, added three judges to the Court of Appeal, made this into three divisions in place of the subsisting two, and made (but not retrospectively) judges of this court available for judicial duties in the High Court when the state of business in the Appeal Court justifies this, and at the request of the Lord Chancellor It further enables the Chancery Division, which legally consists of six judges, at any time that there is a vacancy (as was then the case) to carry on with five until the business in that division renders the full number necessary.

Other matters of judicial interest during the year were: the publication in January of a letter from the Lord Chancellor strongly recommending justices of the peace who, from old age, infirmity, or other cause, were unable to carry out their duties, voluntarily to retire, an appeal in February for pensions for judge's official clerks; the Prime Minister's statement in the same month that the question of exempting borough, county, and district councillors from jury service was under consideration; and the Home Secretary's announcement, also in February, that he was appointing a departmental committee to inquire into the methods of appointment and conditions of service of justice's clerks, and into questions of principle raised by a recent case in which a justice's clerk, a solicitor, instructed counsel for the prosecution and, during the hearing, addressed the court on disputed questions as to the admissibility of evidence tendered by himself, and then accompanied the justices when they retired to consider their decision. In July Sir Stafford Cripps entered a strong plea, which, however, was negatived, for the creation of a Ministry of Justice, the minister to sit in the House of Commons, and to be responsible to it for judicial appointments and for other matters now in the hands of the Lord Chancellor.

After having been discontinued on the ground of economy

since 1931, the Lord Chancellor's Breakfast, one of the ceremonies marking the re-opening of the law courts after the long vacation, was revived on Oct 12. It took place at noon in the Royal Gallery of the House of Lords, following morning service at Westminster Abbey, and was attended by some 700 guests, for the most part judges and barristers.

At the end of 1938 His Majesty's High Court of Justice consisted of the following judges:

THE CHANCERY DIVISION

	Apptd.	Age
The Lord High Chancellor (President) The Right Hon Lord Maugham	1938	72
Sir Christopher J. W. Farwell	1929	59
Sir Charles Alan Bennett	1929	61
Sir Charles Stafford Crossman	1934	68
Sir Gavin Turnbull Simonds	1937	57
Sir Fergus Dunlop Morton, M.C.	1938	51

THE KING'S BENCH DIVISION

The Lord Chief Justice of England The Rt Hon. Lord Hewart	1922	68
Sir George A H Branson	1921	67
Sir John Anthony Hawke	1928	69
Sir Ernest Bruce Charles, C B E	1928	67
Sir Travers Humphreys	1928	71
Hon Sir Malcolm Macnaghten, K.B E	1928	69
Hon Sir Geoffrey Lawrence, D S O	1932	58
Sir Cyril Atkinson	1933	64
Sir John Edward Singleton	1934	53
Sir Walter Greaves-Lord	1935	60
Sir George Malcolm Hilbery	1935	55
Sir Wilfrid H P. Lewis, O B E	1935	57
Sir Frederic John Wrottesley	1937	58
Sir Frederick James Tucker	1937	50
Hon. Sir Cyril Asquith	1938	48
Sir Roland Giffard Oliver, M.C	1938	54
Sir Reginald Powell Croom-Johnson	1938	59
Sir Wintringham Norton Stable, M C	1938	50

Early in 1939 the King's Bench Division was increased by two additional judges, and in the previous December the Attorney-General had announced that it was intended to arrange that the Division should have the further assistance of three Lords Justices

THE PROBATE, DIVORCE, AND ADMIRALTY DIVISION

President. The Rt Hon. Sir Frank Boyd Merriman, O B.E.	1933	58
Sir George Philip Langton	1930	57
Sir Alfred Townsend Bucknill, O.B E	1935	58
Hon. Sir Stephen O Henn-Collins, C.B.E.	1937	63
Sir Francis L. C Hodson	1937	43

His Majesty's Court of Appeal consists of four *ex-officio* judges, *viz.* the Lord Chancellor, the Lord Chief Justice, the Master of the Rolls (Rt. Hon. Sir Wilfrid Arthur Greene, apptd. 1937, aged 55), and the President of the Probate, Divorce, and Admiralty Division (*above*), together with the following eight Lords Justices of Appeal, the number having been increased from five by the Supreme Court of Judicature (Amendment) Act, 1938 (*see above*):

Rt. Hon. Sir Henry Herman Slesser	1929	55
Rt. Hon. Sir Leslie Frederic Scott	1935	69
Rt. Hon. Sir Frank D. MacKinnon	1937	68
Rt. Hon. Sir Albert Chas. Clauson, C.B E.	1938	68
Rt. Hon. Viscount Finlay, K.B.E.	1938	63
Rt. Hon. Sir Arthur F. C. C. Luxmoore	1938	62
Rt. Hon. Sir Rayner Goddard	1938	61
Rt. Hon. Sir Herbert du Parcq	1938	58

The Court of Criminal Appeal consists of the Lord Chief Justice and all the judges of the King's Bench Division.

The ultimate Court of Appeal from all courts in Great Britain and Northern Ireland is, nominally, the House of Lords, theoretically all peers of parliament have the right to hear an appeal and deliver judgment, but since 1844 jurisdiction has been left to the Law Lords, *i.e.* the Lord Chancellor (*president*), all such peers who are holding, or have held, high judicial appointment, and the seven specially appointed Lords of Appeal in Ordinary, who, at the end of 1938 were.

Rt Hon Lord Atkin	1928	71
Rt Hon Lord Thankerton	1929	65
Rt Hon. Lord Russell of Killowen	1929	71
Rt Hon Lord Macmillan, G C V O.	1930	65
Rt Hon Lord Wright	1932	69
Rt Hon. Lord Romer	1938	72
Rt Hon Lord Porter	1938	61

The Judicial Committee of the Privy Council, first constituted in 1833, hears appeals from the Indian, Dominion, Consular, and Ecclesiastical Courts, and from the Courts of Vice-Admiralty. It sits in London as the supreme judicial authority of the British Empire, and consists of the Lord Chancellor, Lord President and ex-Lord Presidents, the Lords of Appeal in Ordinary (*see above*) and such other members of the Privy Council as shall from time to time hold or have held high judicial office within the meaning of the Appellate Jurisdiction Acts, 1876 and 1887. In addition to these, by virtue of the Judicial Committee Amendment Act, 1895 (as subsequently amended, 1908 and 1913), the Administration of Justice Act, 1928, and the Appellate Jurisdiction Act, 1929, certain judges from India and the Dominions are also members. At the end of 1938 the membership was twenty-nine, of whom fifteen were overseas members. (For Minor Courts and Scotland see *Ency. Brt. Book of the Year*, 1938.) (L. H. D)

JUGOSLAVIA: *see* YUGOSLAVIA.

JUTE. Production of jute is centred almost exclusively in India, Formosa being the only other country where the crop is cultivated on a commercial scale. In 1938–39 about 3,074,100 acres were planted with this crop in India, but owing to unfavourable weather conditions it is estimated that production will aggregate 1,200,000 tons only—a decline of 350,000 tons as compared with the previous season.

Over half the jute produced in India is exported in a manufactured state. The United Kingdom, United States, Germany, and France are the chief markets for exports of raw jute, while the large primary producing countries, notably Australia, New Zealand, Argentina, Canada, and the United States, are the chief purchasers of jute manufactures. In 1937, a year of good cereal and fibre crops, there was a keen demand for jute goods, and India exported 830,000 tons of raw jute and 1,031,000 tons of jute manufactures, the highest totals reached since 1929. In 1938, however, demand contracted, and exports of raw jute during the first eight months were 156,000 tons less than in those months of 1937, although exports of jute manufactures rose by 43,000 tons. Indian stocks of both raw jute and jute manufactures accumulated in 1938, and intensive competition among the Indian mills accentuated the weakness of the market. After the middle of 1938, however, reports of the prospective reduction in supplies had a steadying effect upon prices, and in September the

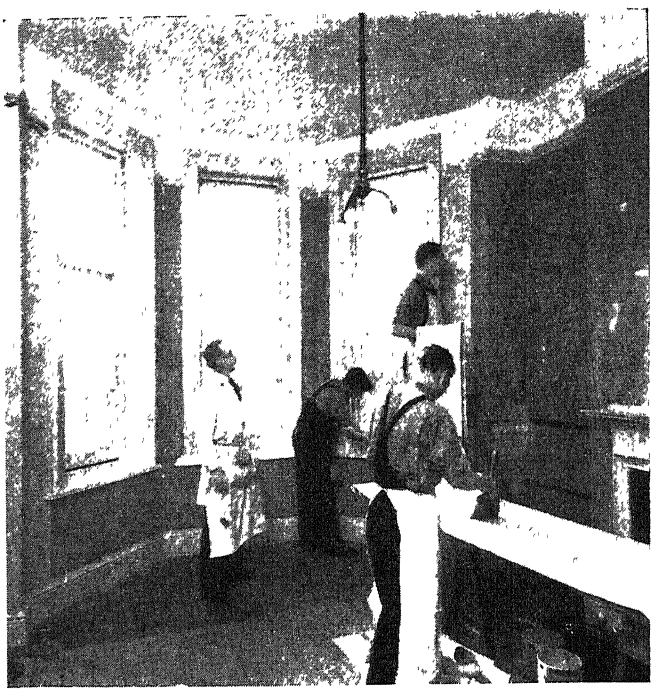
Bengal government decreed a reduction of working hours in the Calcutta manufacturing industry to 45 a week, to slow up production and liquidate stocks. (A. F. P.)

JUVENILE DELINQUENCY. In Great Britain, under the Children's and Young Persons Act, 1933, which was amended by an Act of the same name, 1938 (*see below*), the age of persons dealt with in Juvenile Courts was raised from sixteen to seventeen The latest statistics show that the number of persons in this age group found guilty of indictable offences was 27,126 (597 per 100,000 of the population, as compared with 481 in 1934), persons under seventeen being responsible for 37 per cent of the total number of indictable offences.

Of the 27,126 juvenile offenders, 207 were dealt with at assizes or quarter sessions, and 26,919 by juvenile courts of summary jurisdiction , 48 per cent of these were bound over and placed under the probation officers, eight per cent were bound over without supervision, 23 per cent dismissed after the charges were proved, and ten per cent were sent to Home Office schools. One hundred and sixty-six boys under fourteen were ordered to be birched, one of them (with the consent of his parents) for a non-indictable offence ; the Metropolitan Police District accounted for fifteen, Manchester thirteen, Eastbourne, Devon County, and York, W.R., nine each. Twenty-five thousand five hundred and twenty-eight (over 94 per cent) were males ; 13,704 of these were under fourteen years and 11,824 between fourteen and seventeen , among the female delinquents the numerical position is reversed, the under-fourteen's numbering 755 and those between fourteen and seventeen 843.

Larceny accounted for 20,019 of the 27,126 juvenile cases, 37 per cent of the total number of larceny cases committed by persons of all ages ; " breaking and entering " came next with 5,798, then receiving, fraud, and false pretences with 506, sexual offences 429 (319 of the offenders being guilty of indecent assault), violence against the person 118, and miscellaneous other indictable offences 256. The majority of the larcenies were thefts from shops and stalls, followed by thefts from unattended cars, thefts of pedal cycles, thefts from automatic machines and meters, and cases of " larceny by a servant ". Shop-breaking accounted for more than half the number of breaking and entering charges, and of all convictions for this offence juveniles provided 66 per cent of the total. Of the 506 offenders found guilty of " receiving, fraud, and false pretences ", 402 had been charged with receiving stolen goods. Seventeen males and six females under seventeen years of age committed suicide ; but there were 57 cases of attempted suicide among females in comparison with 23 by males.

Cases in which very young children and truants are concerned are the subject of new rules made under the Children and Young Persons Act, 1933. In future, where a child brought before a court as being in need of care or protection appears to be under the age of five, the court may direct that the child need not attend at an adjourned hearing of the application, unless specially required to do so, as the average child under five is not old enough to understand the proceedings. In truancy cases arising under the Education Act, 1921, it is now recognized that, though there is no statutory requirement that the child should be present, he should not be sent to an approved school, or committed to the care of a fit person for a period of years, without himself having the opportunity of being seen and heard by the court. Further, under the Children and Young



London County Council]
BOYS AT AN APPROVED SCHOOL IN ESSEX DOING THEIR OWN DECORATING

Persons Act, 1938, which came into force on Oct 1, the courts now have powers in cases of truancy to substitute supervision for the more severe punishments mentioned above. Where the court decides upon a supervision order, it can stipulate where the child shall reside until reaching the age of eighteen, though no such provision can be made without his or her consent. Other provisions extend and make more uniform the powers of juvenile courts, and modify the laws relating to their constitution in the Metropolitan Police area. (*See* also PENAL REFORM.) (V. B.)

United States. In passing the Federal Juvenile Delinquency Act Congress has adopted the practices of many States. Under this law, whenever any juvenile is charged with the commission of any offence against the laws of the United States, other than an offence punishable by death or life imprisonment, and such juvenile is not surrendered to the authorities of any State he shall be prosecuted as a juvenile delinquent if the attorney-general in his discretion so directs and the accused consents to such procedure. In such event such person shall be prosecuted by information on the charge of juvenile delinquency, and no prosecution shall be instituted for the specific offence alleged to have been committed by him The said consent required to be given by such juvenile shall be given by him in writing before a judge of the district court of the United States having cognizance of the offence, who shall fully apprise the juvenile of his rights and of the consequences of such consent. The trial shall be without a jury. The consent on the part of the juvenile to be prosecuted on a charge of juvenile delinquency shall be deemed a waiver of trial by jury. In the event that the court finds such juvenile guilty of juvenile delinquency, it may place him on probation except that the period of probation may include but may not exceed the minority of the delinquent, or it may commit the delinquent to the custody of the attorney-general for a period not exceeding his minority, but in no event exceeding the term for which the juvenile could have been sentenced if he had been tried and convicted of the offence which he had committed.

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KAMERUN: *see* CAMEROONS.

KASHMIR: *see* JAMMU AND KASHMIR.

KAUTSKY, KARL JOHANN, German Socialist, was born in Prague on Oct. 16, 1854, and died at Amsterdam on Oct. 17, 1938. An account of his life and work may be found in the *Ency. Brit.*, vol. 13, p. 298 Following the National-Socialist revolution in Germany, Kautsky fled first to Austria and later to Czechoslovakia; and after the *Anschluss* in 1938 he found refuge in Holland His later publications include *Are the Jews a Race?* (1926), and *Bolshevism at a Deadlock* (1931)

KAZAKH S.S.R. As in the other members of the U.S.S R, the elections to the Supreme Council of the Republic took place in Kazakhstan on June 24. According to official estimates, 99·2 per cent of the electorate recorded their votes, and it is said that 99·5 per cent of the votes were given for the combined list of communist and non-party candidates, which was alone permitted at the elections. The opening session of the Council took place on July 15 in the capital, Alma-Ata. During the three days' session, the 21 members of the government of the Republic, the Praesidium of the Council, and two special Committees for legislative questions and the budget were chosen by the Council. In the debate, unsatisfactory conditions, particularly in agriculture and in the realm of social policy, were repeatedly pointed out by the delegates. During 1938 a number of persons were executed in Kazakhstan on charges of treason and sabotage.

Area and Population:

Area 1,037,458 sq. miles.

Population (1933) 6,797,000 (rural 5,626,000, urban 1,171,000; Kazakhs 57·1 per cent, Russians 19·7 per cent, Ukrainians 13·2 per cent; workers and employees (1936) 654,700).

Leading Cities (1935 populations): Alma-Ata (the capital, formerly Verny) (197,400), Semipalatinsk (136,400), Karaganda (118,900).

Languages: Kazakh, Russian, Uzbek.

Natural Resources (est.): coal, 60 milliard tons; oil, 1,292·2 million tons; copper, 11 million tons; lead, 2·6 million tons; zinc, 4·6 million tons.

Economic Life 1937:

Collective farms, 7,950; state farms, 241; machine and tractor stations, 287 (24,000 tractors, 5,000 lorries); sown area, 14,408,648 acres.

Invested in industry (1933–37): 1,785·4 million roubles.

Industrial output (1936):

Heavy industry		604 million roubles
Coal		3,922,000 tons
Copper		132,000 ,,
Zinc		67,300 ,,
Chemical industry (at prices 1926–27)		12·2 million roubles
Meat	,,	36,500 tons
Fish	,,	193,100 ,,
Sugar	,, (Jan. 1–Oct. 1, 1937)	28,400 ,,

Budget 1938: 1,283 million roubles.

Transport and Communications 1936:

Waterways, 3,546 miles; 959,000 tons freight carried; Air transport, 14,859 passengers; 4,220 tons freight. Telephone and telegraph lines, 50,517 miles.

Cultural Life 1937:

Education: expenditure *c.* ½ milliard roubles; elementary and secondary schools (1936–37), about 8,000 (*c.* 1,000,000 pupils); higher educational institutions, 16 (6,000 students), technical colleges, 97 (12,000 students), research institutes, 52; percentage of illiterates, 36.

Libraries, 1,200; theatres, 24, cinemas, 900; newspapers, 183, physicians, 1,390 (S. YAK.)

KEITEL, WILHELM (1882–), German general; artillery commander during the War; major-general in 1934. In 1935, the year Germany introduced conscription, he took charge of the personal section (*Wehrmachtsamt*) in the war ministry, and was thus connected to a certain extent with the reoccupation of the Rhineland zone in 1936, and with the dispatch of German reinforcements to Nationalist Spain. In Feb. 1938, when Herr Hitler threw off the restraining influence of General von Blomberg and other conservative members of the high command, General Keitel, more complaisant in regard to the Nazi Party's plans for an aggressive foreign policy, was appointed chief of the supreme command of the armed forces, being at the same time made a cabinet minister. In that capacity he led the troops invading Austria in March, conducted the war preparations that preceded the first German-Czech crisis in May, and organized the subsequent large-scale army manœuvres which coincided with the second German-Czech crisis in September and ended in the military occupation of the Sudetenland on Oct. 1. Four weeks later he was promoted colonel-general, the highest German rank with the exception of field-marshal.

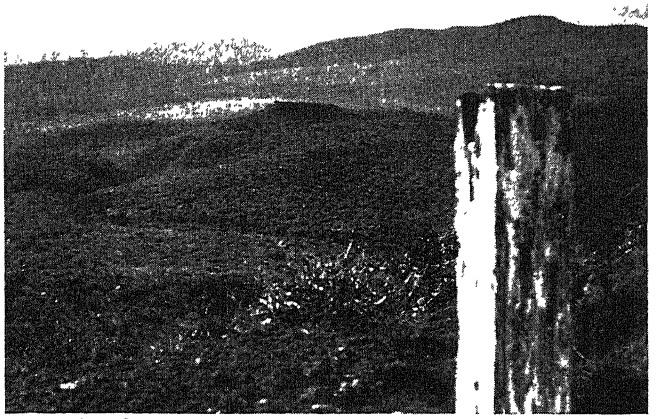


Associated Press]

GENERAL KEITEL

KENNEDY, JOSEPH PATRICK (1888–), U.S. ambassador to Great Britain, was born Sept. 6 at Boston. In his youth he sold newspapers and candy on a Boston excursion boat. He graduated from Boston Latin school in 1908 and from Harvard in 1912. In the latter year he became a bank examiner for Massachusetts. In 1914 he was president of a Boston bank, in 1917 assistant general manager of the Fore River yards of Bethlehem Shipbuilding Corporation, and in 1919 manager of an investment banking branch. In 1929 he was president and board chairman of Film Booking Offices of America, of Keith, Albee, Orpheum Theatres Corporation, and of Pathé Exchange. He was also by this time a familiar figure on the New York Stock Exchange. His counsel was often sought in the financing and reorganization of motion-picture, liquor, and other types of corporations.

In 1934 he was elected chairman of the new Securities and Exchange Commission. He resigned in 1935, but returned to Washington in 1937 at the request of President Roosevelt to organize the U.S. Maritime Commission. He completed his work in less than a year, and issued an exhaustive survey of American shipping. On Jan. 7, 1938, Roosevelt appointed him ambassador to Great Britain.



P. H. K Severn]
RIFT VALLEY, NEAR RONGAI, KENYA. VIEW FROM THE ROAD OVER THE ESCARPMENT.

KENYA. Discontent broke out among the Wakamba people during 1938 following the enforced sale of cattle under the government's anti-erosion campaign: the policy is to be continued, while the methods of carrying it out may be modified. A local committee has been appointed to investigate the employment of native children. In 1938 the Native Lands Trust Bill and the Crown Lands Amendment Bill, to implement recommendations of the Carter Land Commission of 1924, were passed by Legislative Council. The European settlers made an unsuccessful appeal for the insertion of a clause reserving the Highlands for the settlement of British Europeans. Kenya has experienced its first year of income-tax; and revenue from this source amounted to more than £100,000, compared with an estimate of £43,500. The question of the repayment of the original grant of over £5 millions for the construction of the railway system was raised in Legislative Council, and demands are made for commutation.

The budget for 1939 provides £138,000 for defence: it is anticipated that the normal expansion of the social services will suffer. A Defence Force Bill excludes Indians from the force. There is a movement among the settlers towards mixed farming, and efforts are being made to increase the range of crops grown. During the first six months of 1938 pyrethrum, a crop scarcely grown in Kenya a few years ago, was exported to the value of £50,000 and tea exports reached £275,000.

Over 6,000 refugees from Abyssinia have taken refuge in the territory and their maintenance during 1938 is estimated to cost £62,500. (J. L. K.)

Area and Population:
Area 224,960 sq. miles (5,230 sq. miles water).
Population (est. Dec. 31, 1937): Native, 3,253,689; Asiatic, 57,136; European, 16,814. Total, 3,327,638.
Governor. Air Chief Marshal Sir H. R. M. Brooke-Popham, G.C.V.O., K.C.B.

Production:

Wheat, European cultivation	(1937)	21,200 metric tons
Maize, "	" "	101,500 " "
Coffee	(1937)	24,000 " "
Cane Sugar, refined	(1936–37)	16,000 " "
Tea	(1935–36)	6,777,154 lb.
Cotton	(1937)	4,200 metric tons
Sesamum, export	(")	2,245 long tons
Sisal fibre "	(")	29,835 " "
Gold	(")	54,774 oz.

External Trade 1937, Kenya and Uganda:
Imports: merchandise, £9,873,979, bullion and specie, £958,594
Exports: merchandise, £9,116,111; bullion and specie, £540,680.
Re-exports: merchandise £2,094,708, bullion and specie, £401,240

Communications and Transport (Dec. 31, 1937):
Roads, chief arterial . . . 3,160 miles.
Railways, open to traffic. . . . 1,290 miles.
Shipping (1937) tons net entered, 2,150,705, cleared, 2,158,767.
Motor vehicles registered . . . . 11,687.

Finance:
Revenue (est. 1937) £3,571,500, (est. 1938) £3,576,344
Expenditure " £3,437,298, " " £3,542,591
Public Debt (Dec. 31, 1937) £17,072,525 (Sinking Fund £1,942,659).
Currency unit . . one shilling (1s) = 100 cents

Education (Dec. 31, 1937):
European schools: Government, 12, others, 23, scholars, 2,091.
African schools: Government, 52; scholars, 4,593
Indian scholars, 7,635, Mission schools, number 100

KHOREN, Catholicos of Echmiadzin and Supreme Pontiff of the Armenian Church, was born in Tbilisi (Tiflis) in 1893 with the family name of Muradbegian, and died in April 1938. He became Bishop of Erevan in 1910; and in 1920 visited the Armenian communities in Europe and the U S A. as delegate of the Catholicos In Nov. 1932, over two years after the death of the Catholicos George V, during which time Bishop Khoren had been *locum tenens* of the Catholicate, His Holiness was elected Catholicos.

KIDNAPPING. The number of kidnappings in the United States during 1938 equalled the highest level reached since enactment of the Federal Kidnapping Act, on June 22, 1932 The annual record of kidnappings jointly investigated under the terms of that act by the Federal Bureau of Investigation and by State and local police forces appears below. The purpose of kidnapping may be to commit a wholly unrelated crime, such as robbery or rape, or it may be entirely for the purpose of holding to ransom. The following table shows both the total of kidnappings by years, and those cases in which ransom was demanded.

All but two of the 145 cases listed below have been solved, and 286 persons have been convicted for these crimes in the Federal and State courts, seven being sentenced to death, and 45 to imprisonment for life Two kidnappers were lynched, five committed suicide, seven were murdered, and



Keystone]
MCCALL (RIGHT) HEARS HI[illegible]EATH SENTENCE FOR THE MURDER OF JIMMY CASH, IN THE COURTROOM, MIAMI, FLA.

eight were killed while resisting arrest. Active participation by the Federal Bureau of Investigation continues to be the most important factor in detection and suppression

Year	Total Number of Kidnappings	Number of Persons Held for Ransom
1932	5	5
1933	14	10
1934	18	5
1935	26	1
1936	31	1
1937	20	4
1938	31	5
Total	145	31

The outstanding American kidnapping of the year involved James Bailey Cash, Jr., five years old, who was taken from his bed at Princeton, Florida, May 28, 1938, and held for $10,000 ransom The ransom was paid but the child was not returned On June 9, the Federal Bureau of Investigation announced that the child's body had been found, the ransom recovered, and that Franklin P McCall, 21 years of age and also of Princeton, had confessed the crime. On June 16, McCall was sentenced to death

American police activity centred throughout the year on the as yet unsolved kidnapping of Charles F. Mattson, ten years old, from his home in Tacoma, Washington, on Dec. 10, 1936. Ransom of $28,000 was paid, but the nude body of the victim, the skull crushed, was found two weeks later. The hunt for the perpetrator covered a wide range, and many suspects were apprehended and questioned without success. Police announced continuance of unremitting search until the case is solved.

Proposed legislation which would prohibit friends and relatives of kidnapped persons from paying ransom was extensively demanded in the United States during 1938. The purpose is to facilitate immediate report of ransom kidnappings to the police, and to reduce the prospect of financial gain from such crimes There was also growing criticism of the practice of allowing free contact of kidnappers demanding ransom with friends of victims, without police intervention or surveillance.

Official reports of kidnapping in England and Wales are confined to stealing children under 14 years of age. The record since 1900, summarized from available official sources, is as follows: 1900–1904, 15; 1905–1909, 10; 1910–1914, 7, 1915–1919, 8; 1920–1924, 4, 1925–1929, 4; 1930–1934, 5; 1935, 4; 1936, 3. On the night of May 24, 1938, two men attempted to kidnap Viscount Nuffield, 61 years old, and largest motor manufacturer in Europe, from the office of his factory near Oxford. Prompt action by police in surrounding the premises resulted in arrest of the kidnappers before they could complete the crime. (*See* also FEDERAL BUREAU OF INVESTIGATION.)

KING, SIR (FREDERIC) TRUBY, New Zealand physician, was born in 1858, and died at Wellington, New Zealand on Feb. 9, 1938. He was educated at Edinburgh University. In 1907 he founded the "Plunket Society", that is, the Royal New Zealand Society for the Health of Women and Children; and from 1921 to 1927 was Director of Child Welfare in New Zealand. After the War, the New Zealand government lent him for the purpose of organizing a mothercraft centre in London, where he established the Mothercraft Training Society. Such centres later became established in many other countries. He was made a C.M.G. in 1917, and was knighted in 1925. His publications include *Feeding and Care of Baby; The Expectant Mother,* etc; and an edition of his teachings was edited by his daughter under the title of *Mothercraft*

KING, WILLIAM LYON MACKENZIE, C.M.G., M.P. (1874–), Canadian statesman; Canadian (1909) and Imperial (1922) privy councillor, prime minister of Canada 1921–June 1926, Sept 1926–1930, and since Oct. 1935 Mr King was born in Ontario, educated at Toronto University, entered parliament in 1908, and in 1919 followed Sir Wilfrid Laurier as leader of the Liberal opposition Details of his career will be found in the *Ency Brit*, vol 13, p 392.



P.P. Bureau]
RT. HON. W. MACKENZIE KING

Following his previous announcement about expenditure on armaments (*see Ency Brit. Book of the Year,* 1938, p. 361), Mr King in May 1938, told the Dominion House of Commons that if Great Britain were engaged in war Canada's participation would be a matter for the Canadian parliament to decide, but that she would not be drawn into war for the sake of sanctions imposed by the League of Nations; and during the Czechoslovak crisis in September he cordially supported Mr. Chamberlain's efforts for peace and arranged immediately to recall parliament, then in recess, should these efforts fail.

In August Mr. King welcomed Mr Roosevelt, the United States president, and with him officially opened the Thousand Islands bridge connecting the two democracies across the St Lawrence; and on Nov. 17 at Washington signed the American-Canadian trade-agreement.

The closing weeks of the year were darkened by a "revolt" of Mr. Hepburn, the Liberal premier of Ontario, who characterized the prime minister's theories as impracticable and his policy as merely *laisser-faire.*

KIRGHIZ S.S.R. On June 24, at the elections of the Supreme Council of this Republic of the Soviet Union, 99·1 per cent of votes for the communist and non-party block were recorded, this being slightly less than in the other Union Republics. Altogether 284 members were elected. The agenda of the Supreme Council of Kirghizstan, at its first session in Frunze in July, included chiefly the election of the Praesidium and of the government, the appointment of special technical commissions, and a discussion on the situation in the individual branches of administration. The activities of the commissariats for agriculture, trade, education, etc., were sharply criticized. The Council also amended or amplified several articles of the constitution. An important new motor road (510 miles) from Frunze to Osh is under construction, and half of it has already been opened to traffic.

Area and Population:

Area 76,062 sq. miles.

Population (1933) 1,302,000 (rural 1,100,000, urban 202,000; Kirghiz 66·6 per cent, Russians 11·7 per cent, Uzbeks 11 per cent).

Leading Cities (1936 populations): Frunze (the capital) (86,300), Kizil-Kiya (13,500).

Languages: Kirghiz, Russian, Uzbek.

Economic Life: Invested in agriculture (1933–37), 138 million roubles. Sheep farms (1938), 900, stud farms (1938), 500; dairy farms (1938), 802; pig farms (1938), 180. Machine and tractor stations (1937), 43; tractors, 3,800 Sown area (1937), 2,584,666 acres. Cattle (1937), 2,263,000.

Output of electric power (1936), 25 million kwh.

Budget 1938: 347 million roubles.

Cultural Life 1938:

Education: expenditure (1937), 120 million roubles; elementary and secondary schools, 1,800 (*c.* 225,000 pupils). Libraries, 150; theatres, 9; cinemas, 250; newspapers, 45; physicians (1937), 270. (S. YAK.)

KNIGHT, DAME LAURA, D.B.E., R.A., British painter and etcher, was born in Derbyshire (*née* Johnson) in the 1880's and was brought up in somewhat straitened circumstances in Nottingham, where her mother was an art teacher (*see* her autobiography, *Oil Paint and Grease Paint*, 1936). After very little formal tuition at the Nottingham Art School she herself became a teacher. In 1903, when she first exhibited at the Royal Academy, she married Harold Knight (R.A. 1937) She was an official painter to the Canadian forces during the World War, and afterwards concentrated on paintings of the circus, theatre, and ballet—though she made her reputation with "Daughters of the Sun", a large picture of bathers.

Dame Laura was elected A.R.A. in 1927 and R.A. in 1936; in 1937 she was the first woman to serve on the Hanging Committee. She was awarded the D.B.E. in 1929. Her "Spring in Cornwall" was bought for the Tate Gallery in 1936.

KOREA (*Chosen*), a part of the Japanese Empire. Area 85,206 sq. miles, including 1,018 islands. Population (Dec. 31, 1936) 22,047,836, including 608,959 Japanese and 65,275 Chinese and other foreigners. The capital is Seoul (Keizyo), population (1933) 382,491. Other cities: Fusan, 139,538 (1931); Phyòng-yang (Heizyo), 144,215; Taikyu, 102,180. Governor-general, General Jiro Minami (since 1936).

Education and Religion. Korea in 1935 had 4,440 schools of all kinds, with 1,067,387 students. There are a number of Christian mission schools in the country. Prevalent forms of religion among the Koreans are Buddhism, Taoism, and Confucianism. There were 441,419 Christians in Korea in 1934.

Finance and Banking. The unit of currency is the Japanese yen (worth 1*s.* 2*d.* at the end of 1938) The Bank of Chosen is the central banking institution and there are ten other banks, with deposits totalling 686,191,000 yen. The budget for 1938–39 was 505,158,965 yen.

Trade and Communications. Korea's foreign trade is mainly with Japan. Exports in 1936 were valued at 593,313,000 yen and imports at 762,417,000 yen. Of the exports, 518,047,000 yen worth were sent to Japan, and 647,918,000 worth of imports were purchased from Japan. There were 2,219 miles of railways in Korea in 1936 and 17,259 miles of highways. There were 1,134 steamers, with a tonnage of 70,184 and 11,730 sailing-boats, with a tonnage of 150,473. There are three airports, at Seoul, Phyong-yang and Urasan, and regular air communication is maintained with Japan and Manchukuo. The total length of telephone and telegraph lines is 5,922 miles and 5,436 miles respectively.

Korea is overwhelmingly an agricultural country and over eighty per cent of its population is engaged in farming. Rice is the main crop, production in 1936 reaching the figure of 97,000,000 bu. of which a little less than half was exported to Japan. Other agricultural products include wheat, barley, soya beans, apples, cotton, sugar-beets and silk. The output of gold in 1935 was valued at 49,909,000 yen; no figures of production have been issued since the summer of 1937. (W. H. CH.)

KUWAIT: *see* ARABIA.

KWANTUNG: *see* JAPAN.

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LABOUR. Labour movements and conditions in 1938 were subject to contrary influences arising from varying economic developments in different parts of the world. In Germany and Japan, and also to a smaller extent in Italy, intensive activity in the armament industries dominated the situation, leading to a rapid increase in employment and production. In the United States, on the other hand, the sudden fall of government expenditure after the payment of the veterans' bonuses combined with the continual distrust of President Roosevelt's policies by American capitalists to bring about a very serious recession in the latter half of 1937. This recession continued into 1938, and through most of the year employment was at a low level. Recovery came in the autumn, as renewed government expenditure began to produce its effects. But even so employment remained well below the level of 1937. In France, though there was not much change in the level of employment, depression remained severe, despite increased expenditure on armaments; for France was throughout the year in a condition of continuous political and economic crisis. In Great Britain, largely as a reflection of the course of events in the United States, but also partly owing to the war in China and the disturbed political conditions in Europe, employment fell off from the level reached in 1937, though the fall was much less severe than in the United States, and the renewed depression affected stock market values much more than production or employment, which were to some extent stimulated by increased expenditure on armaments. Nevertheless, unemployment in Great Britain rose from 1,333,000 in Sept. 1937 to 1,807,000 in Sept 1938, and the index of employment fell over the same period from 114 to 111 (1929 = 100).

The figures given in the table below reflect these divergent movements. They require, however, to be supplemented in order to get a clear picture of trends. In the United States the volume of employment, as measured by hours actually worked in manufacturing industries, fell off very much more than the number of workers employed. The latter reached bottom at 77 (1929 = 100) in June 1938; but in this month the corresponding index of hours worked was as low as 56, which was nearly as bad as at the bottom of the depression in 1932–33 (46 in 1932, and 53 in 1933). By Sept. 1938, the index of employment was back to 84, but that of hours was still only about 64. In terms of employment as a whole, including non-manufacturing occupations, the position was never so bad, the National Industrial Conference Board's index of workers employed falling only to 89 in the first half of 1938. But there is in this case no comparable index for hours worked.

In France both the numbers employed and the hours worked remained fairly stable, with only a small decline in the first half of 1938 from the depressed level existing in the corresponding period of 1937. The French situation was dominated by the continual hostility of the employers, especially the large firms, to the forty-hour week, and by the instability of the political situation. The *Front Populaire*, which was brought to an end by the secession of the Radicals in the autumn of 1938, was growing less real all through the previous months; and a growing section

Employment

(1929 = 100)

	Average of 1932	Corresponding month of			Month
		1936	1937	1938	
Great Britain (Insured Workers)	92	108	114	111	Sept.
U.S.A. (manufactures only)	63	91	103	84	Sept.
France (1930 = 100)	81	75	80	81	Sept.
Germany (Health Insurance Returns)	71	102	109	118	Sept.
Italy	78	98	109	113	Aug
Japan	82	116	129	143	June
Poland	64	82	93	99	Aug.
Czechoslovakia	83	88	97	98	Aug.
Switzerland	76	70	79	78	June
Holland	79	73	81	83	Sept
Belgium	78	87	91	86	July
Sweden	89*	109	119	118	June
Canada	72	90	104	97	Aug.
S. Africa	87	125	131	139	July
Australia	74	109†	116†	123	June
International Index of Unemployment Adjusted for seasonal variations	291	159	114	—	April
Unadjusted	291	164	112	108	April
International Index for Employment:					
Workers Employed	75	91	100	98	April
Degree of Employment	79	90	95	101	March

* 1933. † Annual Averages.

of the Radicals was supporting the demands of the employers and the parties of the Right and Centre for a frontal attack on the forty-hour week and on the Trade Union concessions granted by the Blum government. Emigrant French capital refused to return, despite the blandishments of successive finance ministers; and consequently investment and employment remained at low levels, and even rearmament was greatly retarded by the embarrassed condition of public finance. The contention of the employers was that within the limits of the forty-hour week it was impossible profitably to expand production, and that the first step towards the return of capital must be a lengthening of the working week without wage-increases, and a diminution of the power of the Trade Unions over conditions of work in the factories. As the Radicals broke more and more away from their alliance with the Left parties, the Daladier government began to nibble at the forty-hour week by admitting a growing number of exceptions; and after the Munich crisis M. Reynaud, the new Finance Minister, included in his plan of decree-laws an abandonment of the forty-hour standard in favour of a working week of five and a half days, based on the eight-hour day, with provision for a longer week in cases of national urgency. The Trade Unions and the Socialist and Communist parties protested strongly against the Reynaud plan, which also readjusts taxation so as to make it bear more harshly on the working classes. A one-day general strike was called for Nov. 30, but, owing to strong measures taken by the

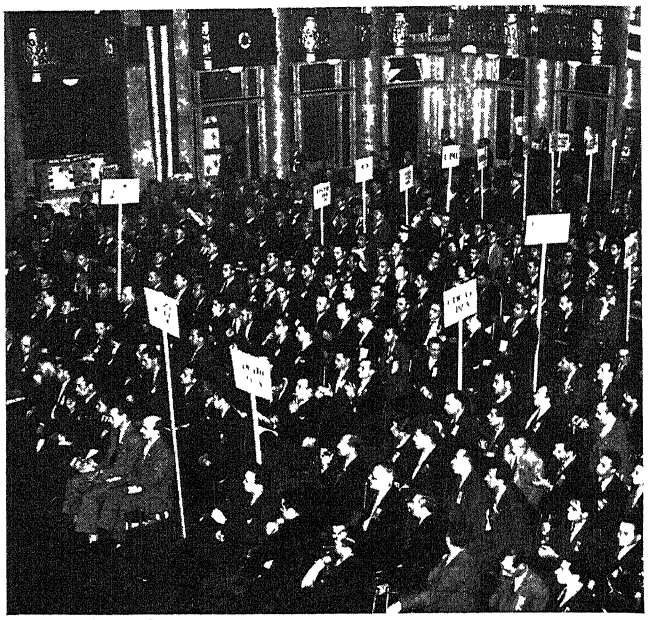
government and to the very poor response of the workers to the C G.T.'s call, the strike was a failure.

In Germany the intensification of armament activity, the pushing much farther of the Four-Year Plan of economic self-sufficiency, and the aggressive development of dumping abroad by means of export subsidies and barter agreements with foreign countries have virtually made an end of unemployment and induced an acute shortage of labour Women, previously sent by the Nazis out of industry back to the home, have been recalled to employment wherever possible ; immigrant labour has been borrowed from Italy under a barter scheme ; and invitations have been issued to Germans working abroad to return for labour service in the Reich. There is still an acute shortage of many consumers' goods, caused both by foreign exchange difficulties and by the concentration of workers upon the production of armaments , and many of the goods supplied are of very inferior quality—especially in the case of clothing made of substitute materials produced at home. In the absence of any form of Trade Unionism or collective bargaining it is impossible to get any reliable information about the conditions of labour ; but foreign observers report a good deal of factory unrest on account of long hours, harsh discipline, low wages, and defective supplies and qualities of consumers' goods. It is clear that the high level of German employment depends primarily on the demands of the State, which has virtually a monopoly of the capital market, and on the call for labour made by the attempt to create home industries for the production of substitutes for imported goods.

In Italy employment and production have risen much less rapidly than in Germany, and there has probably been a falling-off in the pace of armament-output since the close of the main campaign in Abyssinia. But war materials as well as men have continued to be sent to Spain in very large quantities. The index of industrial production as a whole fell off after the early months of 1938, and it became clear that Italy, much worse equipped for *autarkie* than Germany, was finding increasing difficulty in financing her requirements of raw materials As no figures of unemployment are now issued, the effect of these difficulties in causing loss of work cannot be measured ; but it is plain that the published figures of employment do not show enough expansion to absorb the rapidly growing population.

In Japan, actual war on a grand scale has caused very rapid industrial expansion, and employment has risen sharply. Much overtime has been worked, largely compensating the factory workers for rising prices, of which the burden has fallen chiefly on the peasants. But the limits of industrial expansion in the heavy industries within Japan's existing resources seem now to have been reached, and the pace of development has accordingly slowed down. In the textile industries there has been a sharp decline in production and employment, owing to conditions in China and the United States.

In the other European countries covered by the table there have been no marked changes. Sweden remained prosperous despite the recession in the United States, whereas Switzerland, Holland, and Belgium remained depressed. In Czechoslovakia there was little change, until industry was dislocated by the crisis in the autumn. Canada suffered some fall in employment as a reaction to the United States depression, whereas in South Africa, enriched by the continued high price and output of gold, and in Australasia employment and production continued to improve. The New Zealand Labour Government



Wide World Photos]

DELEGATES AT THE FIRST STATE CONVENTION OF UNIONS AFFILIATED WITH THE C I.O., IN NEW YORK

received in the autumn an emphatic renewal of its mandate from the electors.

Over the world as a whole employment, as measured by the I.L.O. Index, was lower in the early months of 1938 than a year before , but the " degree of employment ", taking account of overtime and short time, was somewhat higher, mainly as a reflection of the increasing production of armaments.

The Labour movement in 1938 developed broadly in correspondence with the tendencies which have been described. In Great Britain the Trade Unions increased their membership both by recovering strength in the older industries and by gaining recruits in some of the newer, expanding occupations The affiliated membership of the Trades Union Congress rose from 3,295,000 in 1934 and 4,009,000 in 1937 to 4,460,000 in 1938. The largest increases from 1937 to 1938 were in the Transport and General Workers' Union (from 523,00 to 611,000), the National Union of General and Municipal Workers (from 340,000 to 405,000), and the Amalgamated Engineering Union (from 248,000 to 299,000) ; and there were also large increases among garment workers, shop assistants, iron and steel workers, and agricultural workers. Practically every section of the movement increased its membership , and the miners and railwaymen again came near to completely solid organization. But despite this rapid advance, the great majority of workers in many of the newer industries and occupations remained untouched. There were many forward movements for improved wages and conditions , but, except in the considerable spread of payment for holidays under collective agreements and the large advance made by collective bargaining in the distributive trades, there was no outstanding development during the year.

In the United States, the recession checked the rapid advance of the Committee for Industrial Organization, which nevertheless was able to hold its position, and to claim about 4,000,000 members in 1938, as against less than 3,500,000 organized in the older American Federation of Labor. The C.I.O. was compelled to postpone its offensive against Henry Ford and other big employers who continue to maintain the ban on Trade Unions : it concentrated in-

stead on consolidating its hold on the territories already won. The American Federation of Labor at last joined the International Federation of Trade Unions, partly in order to forestall an application for membership by the C I.O There were various attempts to promote unity between the rival American movements; but nothing came of them, and at the 1938 convention the C I.O. abandoned its provisional character and gave itself a permanent constitution The obstacle to unity, apart from personal differences, is the refusal of the A.F. of L. to accept the principle of "organization by industry", which the C.I.O. regards as indispensable for the unionizing of the workers in the mass-production plants.

In France the *Confédération Générale du Travail* was forced to adopt a policy of defence in face of the political instability and the repeated attacks on the forty-hour week. It held its membership in the early months of 1938; but later in the year membership began to fall. The French workers have never taken kindly to the regular payment of Trade Union dues; and it was unlikely that the inflated membership of 1936–37 would be maintained unless the Unions were able to keep up a continuous forward movement There has been the added complication of internal bickering between Right and Left groups inside many of the unions. But the movement has so far held together remarkably well in face of the economic depression and almost continual political crises. It has been faced by a difficult situation forced on it by the Reynaud-Daladier measures for retrenchment in public spending and the destruction of the forty-hour week

In Czechoslovakia the changes following on the Munich terms have already wrought havoc with the Trade Unions. The Czechoslovak Unions have severed their connexion with the International Federation of Trade Unions, and are now in the process of reconstruction within the new frontiers and under the threat of complete suppression in Slovakia. In the areas annexed to Germany, all forms of Trade Unionism have of course been destroyed.

Trade Union membership has increased rapidly in Sweden, Norway, and Denmark, and in the U.S.S.R. Trade Unions have also developed on a considerable scale in certain colonial areas, notably the West Indies, where there have been extensive labour troubles. There has been a very great further advance in New Zealand. In Spain the membership of the General Union of Workers has fallen in consequence of loss of territory in the Civil War. No figures are available for the rival Anarcho-Syndicalist body, the National Confederation of Labour. The International Federation of Trade Unions showed a sharp rise of membership from nine millions in 1935 to thirteen millions in 1936 and 19,426,000 in 1937; this was due largely to the rise in strength of the French movement and to the affiliation of the American Federation of Labor and the Mexican Workers' Confederation.

The Trade Unions in 1938 were necessarily concerned to a large extent with questions of international policy, especially in connexion with Spain and Czechoslovakia, and with raising funds for helping refugees. The British Trades Union Congress acted jointly with the Labour Party in protesting against the Munich agreement, as well as in raising help for Spain, demanding effective measures for the protection of British shipping and the withdrawal of foreign intervention, and protesting against the ratification of the Anglo-Italian Agreement. The 1938 Trades Union Congress was held at Blackpool, with 650 delegates representing 216 societies. It was the seventieth of the series, which dates officially from 1868, though in fact congresses were held in earlier years.

Trade Unionism in 1937-38: Membership in thousands. (The figures given are in most cases for the beginning of 1938, but in a few cases only 1937 figures were available. The first column gives the full membership of the national centres affiliated to the International Federation of Trade Unions. The second column relates to Unions of a similar type not connected with the I F.T.U. The third column gives the membership of Christian Trade Unions, many of which are affiliated to the International Federation of Christian Trade Unions. The fourth column includes all other societies of Trade Union type, as far as membership particulars are available.)

	I F.T U	I.F.T U. type	Christian	Others	Notes
Great Britain	4,461	259	—	—	—
Ireland	—	246	—	—	—
France	5,340	—	488	—	—
Belgium	572	3	319	53	—
Holland	296	—	342	69	—
Denmark	452	39	—	—	—
Sweden	840	17	—	80	—
Norway	323	—	—	—	—
Finland	64	—	—	—	—
Switzerland	228	—	53	70	—
Czechoslovakia	748	—	216	1,409	Before Munich
Poland	350	187	354	208	—
Rumania	60	—	—	—	—
Yugoslavia	56	11	7	86	—

The following table sets out the available figures of world Trade Union membership in 1937–38:

	I.F.T.U	I.F.T.U type	Christian	Others	Notes
Bulgaria	—	—	—	152	—
Greece	272	—	—	—	—
Hungary	113	—	40	—	—
Austria	—	—	?	415	Corporative
Germany	—	—	—	?	Labour Front
Italy	—	—	—	5,901	Fascist
Spain	1,905	—	?	?	Syndicalist
U S.S.R.	—	—	—	22,427	Communist
Other European Countries	27	1	9	72	Corporative
U.S A.	3,469	4,000	—	?	C.I.O.
Canada	135	123	54	—	—
Mexico	946	—	—	?	—
Argentina	289	—	17	121	—
Rest of Latin America	—	13	—	481	Incomplete
Australia	—	600	—	298	—
New Zealand	—	163	—	—	—
South Africa	—	39	—	—	—
India	151	103	—	?	Indian T.U.C
Ceylon	—	14	—	—	—
Netherlands Indies	32	—	—	—	—
China	—	—	—	912	—
Japan	—	—	—	378	—
Palestine	99	—	—	—	—

(G. D. H. C.)

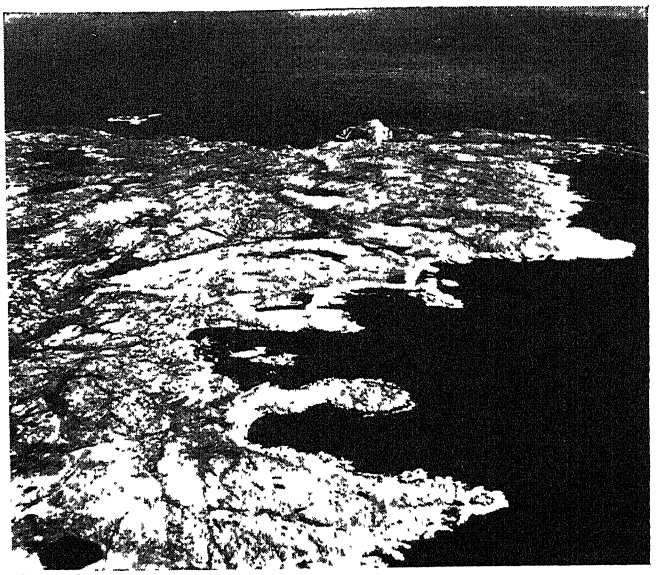
LABOUR PARTY, THE. The party held no annual conference during 1938. The executive committee, however, issued an interim report covering the period from Oct. 1937 to July 1938; and this showed an increase, both in individual membership of the local parties and in trade

union affiliated membership. During the period covered by the report, the party won five seats at by-elections (making nine gains in all since the general election of 1935). It has since won a further seat at Dartford, bringing the membership of the party in the House of Commons up to 164.

In the absence of a conference, no changes took place during the year in the constitution or fundamental policy of the party. The new constitution adopted in 1937 led to some increase in the representation of the "Left" on the National Executive; but this has so far not led to any marked change in policy The party has maintained its opposition to any "United Front" with the Communists, or to any "Popular Front" based on an electoral coalition, though the absence of any reference to these issues in the latest manifesto, issued just after the Czech crisis, has been taken by some observers as indicating a possible modification of the Executive's views on electoral collaboration. This question came up in a practical shape in two constituencies immediately after the crisis, when at Oxford and Bridgwater the local Labour Parties decided not to run candidates in order to leave the way clear for "Independent Progressives." In both these areas, the individual members of the Labour Party worked for the Independent candidates, but the local parties stood aside officially, and no help was given by Transport House. Early in 1939 the Labour Party executive rejected by seventeen votes to three a memorandum in favour of the "Popular Front" prepared by Sir Stafford Cripps, who had become its principal advocate. Sir Stafford, who claimed that the general opposition to the government in the country was much stronger than the active support for the Labour policy, immediately circularized his memorandum to all local Labour Party organizations. The executive replied by expelling him from the Party, a course which led to bitter criticism.

In the municipal elections of Nov. 1938 the Labour Party suffered a small setback in England and Wales, especially in the North and Midlands; but this was largely offset by gains in Scotland. Labour did well in Greater London, doubtless under the influence of its successful administration of the L.C.C.

The Labour Party during the past year has been chiefly concerned with working out the details of the "Immediate Programme" adopted in 1937, and with issues arising out of the repeated international crises. It has actively demanded more energetic measures for the protection of British ships trading with Spain and for promoting the withdrawal of Fascist intervention; and it strongly opposed the ratification of the Anglo-Italian Treaty without a prior withdrawal of Italian forces from Spain. In the Czech crisis, it took its stand for full collaboration with France and the Soviet Union in resisting Nazi aggression, and protested strongly against the Munich "settlement" as a betrayal of the democratic cause. Since the crisis, it has devoted much criticism to the inadequacy of the government's measures for civilian protection and aerial defence, and has attacked the government on the ground that, although "enormous sums have been voted by parliament for national defence, the nation has not had value for its money". Its latest manifesto, issued in Nov. 1938, demanded a strong democratic government, and effective organization of the nation's man-power and economic resources for national defence (but without conscription), full maintenance of the social services despite the demands of rearmament, food storage and a great increase in home agricultural production, a national



Keystone]

AERIAL VIEW OF THE COAST OF LABRADOR

plan for the absorption of the unemployed and the development of trade with the Empire, the United States, and other democratic countries, and an attempt to rebuild the League of Nations and the system of collective security against aggression. "War", says the manifesto, "is not inevitable"; and "Britain must be prepared to enter into discussions with all nations, whatever may be their systems of government, for the removal of genuine grievances. But such discussions must not be conducted under the threat of armed force". The colonial question must be settled, not by redistributing territories, but by applying the principle of international trusteeship to the colonies of all nations alike. (G. D. H. C.)

LABRADOR, the most easterly part of North America, the possession of which was claimed by both Canada and Newfoundland. In 1927 the decision of the Judicial Committee of the Privy Council awarded Newfoundland (*q v.*) sovereignty over the territory, which has large potential resources in timber and minerals.

Area and Population:

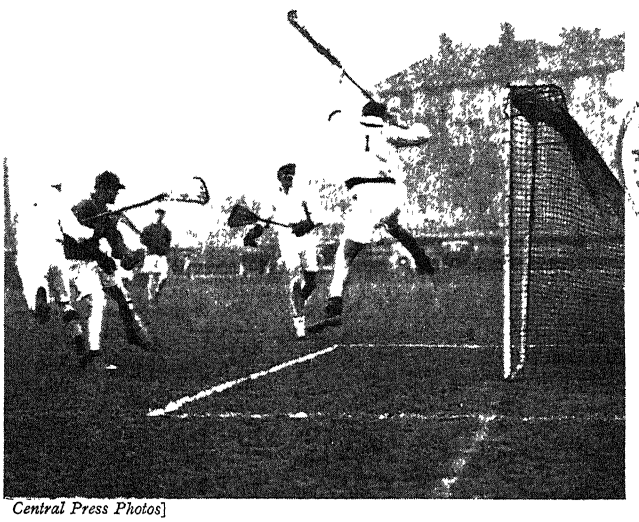
Area *c.* 110,000 sq. miles.

Population (est. Dec. 31, 1936) *c.* 5,000.

LABUAN: *see* STRAITS SETTLEMENTS.

LACROSSE. English lacrosse again had a successful season in 1937–38, though the Men's Internationals were not played, and it became necessary to postpone the match for the English County championship. There are now 65 clubs affiliated to the English Lacrosse Union, with a playing membership of about 2,000. The All-England Ladies' Association embraces 54 clubs, 23 colleges, and 149 schools. The principal results of the season were: the National Club championship, which carries the Iroquois Cup, was won for the first time in its 28 years by the Old Waconians (Northern champions), who decisively defeated Willoughby (Southern champions), 12 to 2: the latter, however, won all their other matches, and secured the League championship as well as the Southern Flag final; Oxford beat Cambridge, 7 to 3, and North beat the South, 14 to 6; in the Southern Counties' championship, Surrey was victorious over Kent (5 to 3) after a replay.

In the Ladies' Internationals England again won the tournament, beating Scotland, 17 to 2, Ireland, 15 to 1, and Wales, 18 to 2; the Ladies' Oxford *v.* Cambridge went to Oxford (15 to 4) for the sixth time in succession. This year for the first time county matches were run as



Central Press Photos]
LACROSSE. NORTH *v.* SOUTH AT THE OVAL

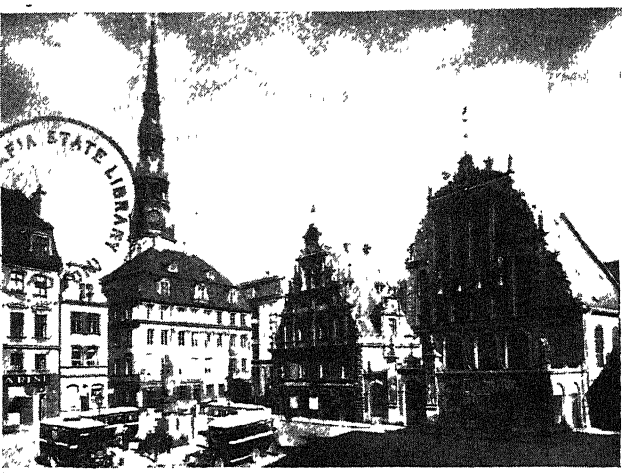
a tournament, the South and East being divided into two groups, Kent and Sussex being the winners.

Mount Washington headed the list of clubs in the United States, nosing out the formidable Baltimore A.C. twice to establish a clear claim to the club championship Subsequently in the open championship, St John's of Annapolis defeated Mount Washington, thus leaving the situation in something of a muddle.

LAMBERT, CONSTANT (1905–), musical composer, conductor, and critic, was born in London, and is regarded as one of the most talented of the younger personalities in British music to-day. The son of a well-known painter, he was educated at Christ's Hospital, entered the Royal College of Music, and, like Stravinsky, was soon discovered by Serge Diaghilev, who commissioned him at the age of 21 to write a ballet (*Romeo and Juliet*), which was produced in Monte Carlo. The following year, in 1927, his second ballet, *Pomona*, was presented in Buenos Aires, and in 1929 his most successful work, the *Rio Grande*, an adroit adaptation of jazz idioms to serious music, was produced in Manchester. Among his other compositions are a piano sonata, a piano concerto, eight Chinese songs, *Music for Orchestra* (1931), and *Summer's Last Will and Testament*, a masque for chorus and orchestra (1936). He is now musical director of the Vic-Wells ballet, and has collaborated in the production of several successful new ballets, such as *Les Patineurs*, *Les Rendezvous*, and *Horoscope*. One of the most intelligent and clear-sighted of modern music critics, he is a regular contributor to the press, especially the *New Statesman and Nation* and *Figaro*, and his book *Music Ho!, A Study of Music in Decline* (1934), is an extremely sensible, well-informed and frequently humorous exposition of modern tendencies in music.



P. P. Bureau]
CONSTANT LAMBERT



Keystone]
THE CENTRE OF THE CITY OF RIGA, LATVIA

LAOS: *see* FRENCH INDO-CHINA.

LATVIA. Apart from the unrest in central Europe, a problem nearer home was viewed with growing apprehension: the long-standing Lithuanian-Polish dispute. In March, Latvia joined with Estonia in urging Lithuania towards its composition. In December she followed Estonia in a neutrality law. Internally, it was decided (February) not to prolong the term of martial law, in force since May 1934. By Latvia's twentieth birthday (Nov. 18) a new Constitution was foreshadowed providing for a return to parliamentary government. Consideration was given to the trade impediments due to the difference in gauge of the railways running east and west of Riga and Ventspils (Windau). M. Munters, Foreign Minister, paid London an official visit in December. (H. Fw.)

Area and Population:
Area 25,016 sq. miles.
Population (est. Dec. 31, 1937) 1,971,000.
Chief Towns (pop. 1935): Riga (capital) (385,063), Liepaja (57,098).
President. Karlis Ulmanis.
Language. Latvian.
Religion. Christian (Protestant 55 per cent, Roman Catholic 24·5 per cent, Greek Catholic 9 per cent, Greek Orthodox 5·5 per cent).

Production 1937:

	metric tons		metric tons
Wheat	171,500	Potatoes	178,200
Barley	218,400	Beet Sugar	44,200
Rye	421,500	Flax	23,100
Oats	405,000	Wood Pulp	36,000

Industry and Labour 1937:
Factories, 5,717; employees 94,186.
Index of employment, average (1937) 116·3
(1929 = 100) ,, (Sept. 1938) 124·7
Applicants for work, average (1937) 3,014
,, ,, ,, (Oct. 31, 1938) 1,060

Overseas Trade 1937:
Imports, total 231,200,000 lats
Exports, ,, 260,700,000 ,,

Communications and Transport 1937:
Roads suitable for motor traffic 932 miles
Railways, length of line 2,080 ,,
Inland Waterways 2,775 ,,
Motor vehicles licensed (Jan. 1, 1938) 5,829

Finance and Banking (000's omitted):
Revenue (1937–38) 188,700 lats; (est. 1938–39) 190,900 lats.
Expenditure (1937–38) 173,600 lats; (est. 1938–39) 190,500 lats.
Public Debt (April 1, 1938) 156,600 lats
Notes in Circulation (Dec. 19, 1938) 82,180 ,,

Gold Reserve (Dec. 19, 1938) . . 82,600 lats
Exchange Rate (1938) . . 25·22½ lats = £1 stg

Education 1937–38 :

Elementary . schools, 1,904 ; scholars, 230,533
Secondary : ,, 114 ; ,, 23,797

LAW AND LEGISLATION. For the most notable pieces of legislation enacted in Great Britain during 1938, *see* PUBLIC STATUTES OF THE UNITED KINGDOM. Below is given a general survey of the principal legislative measures adopted in various countries during the year to which is appended an account of recent legislation in the United States of America, *see* also DIVORCE, INTERNATIONAL LAW; JUDICIAL DECISIONS, PENAL REFORM; TRAFFIC LAWS AND OFFENCES; etc.

Constitutional and Administrative Law. In a brief study of public legislation during 1938 we cannot do more than outline the general tendencies which inspired it. And to begin with we shall find that it came under the direct influence of social and political life There was the pressure of the economic crisis. There was that of the political crisis, the weakening of democracy in Europe inspired many laws of an authoritarian character Finally, there was the compulsion of the international crisis and the territorial changes which took place during the year, in the Far East, in Spain, in Austria, and in Czechoslovakia

Constitutional Changes There were two new Constitutions during 1938, those of Lithuania and Rumania. As regards the former, the new Constitution of Feb. 11 represents something of a verbal compromise between a democratic and an authoritarian regime, a compromise which is typical of administrative law in Eastern Europe to-day For example, Article 110 declares, in somewhat vague terms, that the President shall legislate "in default of the Diet". Article 114 brings with it serious restrictions on parliamentary prerogatives as regards the budget. One part of the budget may not even be discussed by parliament, the Chamber has not the right to reject the budget introduced by the government, and so on. Were there free elections this Constitution might possibly produce a democratic state. But with the single-party system it can merely continue the authoritarian regime already existing.

If the Lithuanian Constitution, taken at its face value, is a compromise between democracy and an authoritarian state, the Rumanian Constitution of Feb. 27 is an extraordinary return to the old regime. The following Articles are sufficiently characteristic to explain the disorders which preceded its promulgation :

Article 7.—No Rumanian subject is permitted to advocate, either orally or in writing, a change in the form of government of the State, the partition or distribution of the possessions of others, exemption from taxes, or class warfare.

Article 8.—It is forbidden for priests of whatever denomination to place their spiritual authority at the disposal of political propaganda, either within or without the places appointed for their official functions.

Political propaganda in premises intended for worship or on the occasion of religious services is forbidden to all

Any political association on a religious basis or under the pretext of religion is forbidden.

No one is permitted to give or receive oaths of fidelity, other than those permitted by law and in the conditions and forms laid down by the law.

It should be noted that there are some important omissions in the text of the Constitution, which are later on to be filled in by ordinary legislation, to be voted by a parliament elected without any political parties. Further, the Constitution has been completed by a series of decrees, notably that enforcing the dissolution of political parties.

A partial constitutional revision was effected by the Dutch law of Jan 19, which added a new chapter, IVa, to the Netherlands Constitution This chapter proclaims the principle of "Public Corporations" in the following terms :

Article 149*a* —Parliament may set up corporations to lay down regulations applying to certain professions and industries, and groups of professions or industries, as also to matters of professional and industrial activity in general. It shall define the composition, the establishment and the sphere of such corporations

Article 149*b* —Parliament may confer on these corporations the right to issue decrees

Article 149*c* —If the decisions of these corporations are contrary to the law or the general interest, they may be annulled or suspended according to such regulations as Parliament may lay down Parliament may make certain decisions by these corporations dependent on approval by the executive authorities in accordance with regulations which it may prescribe . . .

It is difficult to say how far this element of the corporative State can harmonize with a democratic parliamentarianism

Among constitutional laws there should also be mentioned those promulgated in China on Jan. 1, 1938, on the Political Committee, the Judicial Committee, and the Executive Committee. The Political Committee is the highest organ of the provisional government It has a president, five permanent members and an undefined number of other members The Executive Committee is the highest executive authority of the provisional government. It has a president and five members who may be entrusted, as ministers, with different ministries subordinate to the Committee.

The political events of September had the profoundest effects on the political life and the public legislation of Czechoslovakia. A new State was born after the Munich conference The law of Nov. 19, 1938, established the autonomy of Slovakia. Another law established the autonomy of Sub-Carpathian Russia, later called Carpatho-Ukraine.

The Republic of Czechoslovakia not only became the Czecho-Slovak Republic, but the *type* of the State was changed. The political life of Slovakia shows that we have here, in effect, a new State with ideas diametrically opposed to those inspiring the Czechoslovak constitution of 1920 and to the whole public life of the country till Sept 1938.

Press Laws. In 1938 several countries passed laws regarding the Press.

The Rumanian law of April 13 established control of the financial backing of newspapers, forbidding the receipt of money from abroad, or the giving of secret funds to Rumanian journalists. Article 15 of this law lays down :

It is forbidden to any proprietor or editor of any periodical appearing in Rumania to accept in any form whatsoever, directly or through a third party, any sums of money or other valuable consideration from foreigners. Any person connected with the editing or administration of a publication or a publishing house, or the administration of an owning or publishing company, who shall receive sums of money or other valuable considerations from foreigners, shall be presumed to be party to the transaction.

Commercial publicity carried out in conformity with the normal tariff, does not enter into the provisions of the present article The normal tariff shall be considered as that fixed for each journal by the Ministry of the Interior at the beginning of each year on the advice of a Commission composed of representatives of the association of owners of periodicals published in Rumania, together with the president of the Union of Chambers of Commerce and Industry or their representatives and the president of the Chamber of Commerce and Industry of Bucharest or his representative.

It is forbidden to distribute sums coming from the secret funds of the State, departments, communes or any other public institution, either directly or through a third party, to any periodical whatsoever, or to journalists or publicists.

This prohibition does not apply to publications printed abroad

The same anti-liberal character may be observed in the Bulgarian law on the temporary control of the Press which imposes the necessity for preliminary authorization for all printed matter and a preventive censorship Article II of this law states: All printed matter is prohibited whose contents have not previously been approved by the Press Control Service.

More or less similar dispositions are to be found in the new Greek law of Feb 23 The same tendencies appear in the Latvian law relating to the Press, of Feb 14. Article 9 of this law requires preliminary authorization for all publications, and Article 12 proclaims "sane public opinion" as the aim of press legislation.

If this legislation on the Press shows an obvious retrogression, the new Danish law should be mentioned on the other side. This law has provided an extremely happy formula for the right of reply and of rectification Article 10 declares that the competent authority for any claims for rectification of allegedly false news shall be a special commission on which professional journalists shall sit beside the magistrate "The Commission for Rectification", it lays down, "shall be composed of three members whose president shall be a judge of the Supreme Court and its other members representatives of the Press. The members shall be nominated by the Minister of Justice, the president on the proposal of the president of the Supreme Court, one of the members on the proposal of the representatives of the Danish daily Press, and the other on the proposal of the representatives of Danish journalists In cases where the article complained of was published by an affiliate of the Association of Periodicals, Reviews and Professional Reports, one of the members mentioned above shall be replaced on the court by a member of the Association, on the proposal of the Ministry of Justice. The Commission has the power to give a definitive decision, which shall compel the editor of the periodical to insert a correction. . . ."

Thus, the desire which various national and international organizations of the Press have voiced for a long time, namely to allow journalists to participate in the repression of offences by the Press, has come to fruition in the new Danish legislation

Electoral Law. Changes in electoral law have been few. The new Bulgarian electoral law of Jan. 5 and 28 lays down in Article 17 that "Persons who have not paid their arrears of state or communal taxes, or any other state or communal charges or taxes . . . can not be elected as deputies. . . ."

Similarly, there appears in the Hungarian electoral law of June 3: "The following may not be elected or stand for election as deputies . . . Persons two years in arrears in payment of their taxes; . . . Persons twice convicted of slander within five years, until they have served their sentences. . . ."

Totalitarian Laws. It is impossible to detail all the feverish activity of the totalitarian legislators, but certain tendencies may be indicated. The German Führer's decree of Feb. 4 gives into his hands absolute power over and the complete disposition of the armed forces. It says:

"The command of all the armed forces shall henceforth be exercised directly by me.

"The central direction of the armed forces which has hitherto existed, with its particular duties, shall act as supreme command of the armed forces under me, and shall constitute my General Staff."

The new statute of the Italian Fascist Party, promulgated in Rome on March 11, does not introduce anything very new, but it witnesses a desire to establish the identity of the State and the Party.

Accelerated Procedure. The French Law of Oct. 5, 1938, shows that the functioning of a parliamentary regime in western countries accommodates itself fairly well to an accelerated legislative procedure. The system of decrees in France or in Belgium is not an attack on the prerogatives of the legislative power, but merely a simple technical contrivance

The French law of Oct 5 contains all the elements of this new technique of adapting the parliamentary regime to the procedure of decrees. Its single article lays down: "The government is authorized until Nov. 15, 1938, to take by decrees considered and approved by the cabinet all measures necessary to bring about the immediate stabilization of the economic and financial situation of the country. These decrees, which shall have the force of law, shall be submitted for ratification by the chamber before Jan 1, 1939. . . ."

In order to pick out the dominant tendencies of administrative law during 1938, a few constitutional and legislative examples have been given. As regards the laws of those countries not mentioned in this short review, only a few of the general tendencies can be indicated.

Social life, which is becoming more and more complex, necessitates frequent regulation. Material progress modifies the conditions of life, and citizens meet the state as administrator far more often than as legislator Administrative rules dominate the mass of laws in all countries. Under the compulsion of social necessity, certain restrictions of individual liberty are becoming more and more frequent. But in democratic countries these restrictions are exceptional and do no injury to the traditional principles of the western State: political liberty, universal suffrage, control of the government by those governed.

This democratic conception is rejected by the totalitarian State, where the citizens have no guarantee whatsoever as regards the government, where liberty is forbidden and where suffrage, exercised under the one-party system and with public opinion crushed by the gag on Press and private discussion, has no reality.

Administrative law during 1938 has greatly increased the moral and technical chasm separating the dictatorial State from the democratic State.

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Civil Law. The year 1938 was not marked by any new currents in legislation, nor by any major or revolutionary reforms. On the whole, the new laws showed chiefly the persistence of the legislative tendencies already manifested during the previous years. Behind these tendencies remained the now familiar causative influences of the economic crisis, the social changes which took place in most countries, the development in what is called regulated economy, and the growing tendency on the part of the State to intervene in those domains which have hitherto been reserved almost entirely to individual initiative.

Legislation relating to the individual and the family has, on the whole, undergone only slight modification. The regulations regarding the registration of births, marriages, and deaths has been the subject of quite a large number of

measures in various countries. These, however, are chiefly concerned with the adaptation of older texts or, more particularly, with the adaptation of formerly created registers to modern conditions where information can be more rapidly collected than in former times. The alterations to the laws regarding marriage, divorce, and family organization were more far reaching. In this respect two different currents, flowing in opposite directions, may be seen. The first tends to reduce the liberty of the individual and to submit the constitution of the family to restrictive conditions so as to give it an authoritarian character The other, which might in comparison be termed "liberal", aims, on the contrary, to relax the former rigidity of the family bond and to recognize equal rights for both husband and wife.

The first tendency is shown principally by certain European countries where the legislator is inspired by ideas of a racial character. Marriage, therefore, is organized with a view to what is called "the protection of the race". Thus it is forbidden between certain persons, notably between those of Aryan descent and non-Aryans. Germany's new marriage laws in 1938 merely continue the legislation of previous years on this point. In Italy, on the other hand, the new laws in this respect constitute a legislative innovation.

The second, or liberal, tendency, is that which has been in evidence for about half a century. Its foremost aim is to establish a new basis for relations between parents and children, or husband and wife. The children and the wife are no longer to be subject, as they were under the old law, to the authority of the head of the family. It is in regard to the wife's freedom particularly that this tendency is now displaying itself. The evolution may be regarded as complete in many countries, and the fundamental English law (the Married Women's Property Act) dates from 1882. But there was still a resistance to be found in certain continental countries impregnated with the spirit of the Napoleonic Code. That is the reason why the French law of Feb. 18, 1938, takes on a particular and almost symbolic importance. This law suppresses the former marital authority which compelled the wife to obey her husband. Further, it gives her, in principle, the right to take legal action and enter into contracts without her husband's authority. The new Latvian Civil Code, which came into force on Jan. 1, 1938, follows this tendency also and greatly increases women's legal powers and independence.

This same Civil Code contains new provisions regarding divorce which derive from a legislative tendency of which a certain number of manifestations may be seen. This tendency consists, in general terms, in making the dissolution of a marriage easier. The same tendency inspired the Divorce Act (Scotland), 1938, which adds to the grounds on which a decree may be granted.

The question which gives rise to the largest number of law suits and also to the greatest number of new laws is undoubtedly that of contracts. It is in this sphere particularly that the influence of the economic crisis has made itself felt. In almost every country the legislature has found itself compelled to take protective measures on behalf of certain debtors who, owing to the economic circumstances, were unable to pay their debts. Laws of this nature have been drawn up during the last few years practically everywhere, even during 1938. It may be added that during the last year, it is farmers who have benefited most from such legislative protection. Particular examples are Yugoslavia, in a decree of Jan. 18, 1938; and Spain, in a decree of the Burgos Government which took effect from Jan. 1, 1938. A yet more general measure was instituted in Germany by the law of Aug. 17, 1938, wiping out all debts contracted before 1934 by certain debtors who had lost their positions.

The economic crisis is also responsible for a great number of laws made by a wide variety of countries in an attempt to revive economic activity. Many of these unavoidably did prejudice to the law of contracts as formerly organized. Mention should be made of the various systems by which legislatures tried to give facilities to those who needed credit to bring about an improvement in their business. A Polish law of Feb. 5, 1938, was promulgated on this subject to facilitate loans on mortgage. In France the government having been granted on two occasions, in June and in November, the right to issue decrees, used it—principally in November—to introduce many economic measures designed to improve business and to give credit to those who needed it.

There is another contract, that of leasehold, which has been the subject of new legislation almost everywhere during the last two decades. This legislation is particularly worthy of notice because it clearly shows one aspect of what is often called the socialization or state control of civil law. By tradition, the clauses of a lease, its length, and the amount of the rent are a matter for free arrangement between landlord and tenant. But after the war of 1914, there were not enough dwelling-houses to meet demand and rents soared to such heights that laws were made to prevent tenants of long standing being evicted or their rents being raised unduly. The year 1938 saw a relatively important number of similar laws. Such was the aim of the Belgian law of March 11, 1938, which, among other provisions, prolonged the application of earlier laws; of the decree of March 4 of the Free City of Danzig, which prohibited the raising of rents beyond certain figures; of the Lebanon law of March 5, which provides for the revision (and consequently the reduction) of rents in favour of certain categories of debtors; and of the Polish law of Feb. 1, which continues the application of various laws having as object the reduction of rents.

The consequences of the persistence of the economic crisis influenced the law of contracts in another direction. In certain cases, the growing difficulties of trade caused business men to seek to increase their business by any and every means. Legislatures therefore found themselves forced to intervene to maintain morality in commercial transactions and, in particular, to prevent the resort to certain practices known as unfair competition. In Denmark a law was promulgated on March 31, 1938, to suppress unfair competition and the illegal designation of products. Luxemburg took similar steps on July 16.

The consequences of the economic crisis, combined with complexity of business in the modern economy, bring each year a large number of laws relative to the reform of company management. This movement is connected with another legislative current, which is almost universal and consists of the attempt to safeguard the public savings by stricter regulation. Laws of this class for the most part belong to the category of criminal law, for the protection of the investor is generally carried out by the definition of new offences with which the managers or directors of a company, together with all those connected with the issue and circulation of its shares, can be charged. The general movement towards the reform of company law was most noticeable during 1938 in South America. An important

law on this question was promulgated in Chile on Jan. 10, 1938. Mexico adopted a law on Jan 11 which regulates the direction of co-operative societies in the most careful and minute manner.

While on this subject, mention should be made of the many legislative and administrative steps taken during 1938 to modify the law of bankruptcy They are too numerous to detail here, more especially as most of them have a very limited scope and are merely circumstantial legislation; *e g* it is noticed in some country following a big bankruptcy that some legal rule in force, often a purely technical or secondary one, allows serious frauds and gives unscrupulous persons the means of ruining many small investors. Steps are immediately taken to prevent this in the future by an appropriate special legislation. General reforms of the bankruptcy law, on the other hand, are relatively rare. Special mention should therefore be made of the law introduced in the United States to modify that of 1898, which had established a uniform system of bankruptcy (the Chandler Act, 1938).

It remains to glance at an aspect of civil law whose stability is generally emphasized by commentators: the law of inheritance and of wills. In this respect certain reforms brought in during 1938 are worthy of notice. In Germany a law of Aug. 3, 1938, reduced the requirements as to the form of a will: the place and the date are no longer demanded under penalty of nullity. This reform points to a retreat of legal formalism and is all the more curious in that Germany is generally regarded as the country where, in modern times, legal formalism has been most held in honour.

Still more interesting is the double evolution which occurred during 1938 in France and in England, and whose effect was to bring closer two conceptions of the law of inheritance which had hitherto been so different. England is known as the country where the liberty of the testator is most complete. In France, on the contrary, a certain number of heirs, particularly descendants, cannot be deprived of a large part of an estate, so that the testator can only dispose of a relatively small portion of his possessions. The French rule was all the more strict since the equality established by the law between the heirs was an equality of kind and not merely one of values. That is to say that the portions received by each must be composed of goods of the same nature; it was not sufficient for them to be of the same value. This of necessity led to the splitting up of landed properties. Now in 1938 the Inheritance (Family Provision) Act in England empowered the courts to allow the widow and such children as are unable to earn their own living a certain proportion of the value of the estate of the head of the family. On the other hand, in France the decree law of June 17 gave more liberty to the testator and relaxed the rules on the division of an estate. The equality of the portions need in future be one of value only and not of kind. Thus one of a testator's sons can receive control of the entire industrial or agricultural business of his father, on condition that he pays out to his brothers and sisters the equivalent of their share. These payments may be made on fairly easy terms too, and the law provides that for five years the child who is running the business may demand that the share-out be postponed so that it may not jeopardize the running of the concern.

So, though the legislation of 1938 may not have brought any special innovation in civil law, it shows that the same that it is not unreasonable to think that, almost automatically, a reconciliation is coming between those legal systems which appear most opposed. (M. A.)

United States. During 1938 the objects of major legislation in the United States were agriculture, bankruptcy, civil aviation, foods and drugs, industry, juvenile delinquency, motor vehicles, housing, revenue, and harmful trade practices. Some of these are dealt with below; others are covered more fully under individual headings as indicated.

Agricultural Adjustment Act. The A A.A., drafted with aims similar to that of 1933, provides for payments to agricultural producers who engaged in soil-conserving and soil-rebuilding practices Tenants and share-croppers are included within the term "producers," and are entitled to share in payments to the same extent that they share the produce of their farms or in proportion to the carrying out of soil-building or soil-conserving practices.

The secretary of agriculture is authorized to prosecute before the Interstate Commerce Commission complaints relating to rates, charges, tariffs, and practices with respect to farm products and to develop new markets and new uses for raw materials (*see* HYDROPONICS). The Federal Surplus Commodities Corporation, which would have been terminated on June 30, 1939, is continued until June 30, 1942. Quotas are allotted to the States and penalties are provided for those who market in excess of them. The act also sets up a Federal Crop Insurance Corporation which is to insure wheat crops against failure due to weather, insect infestation, and other unavoidable causes.

Bankruptcy. The new bankruptcy legislation is embodied in the Chandler Act and is the result of an exhaustive investigation on and study under congressional order by the Securities and Exchange Commission. (*See* BANKRUPTCY.)

Civil Aeronautics Act. The new act, patterned on previous transport legislation, places control of various phases of aviation in the hands of a Civil Aeronautics Authority, thus centralizing the various regulating powers. It can issue certificates of public convenience and necessity, regulate rates, and supervise corporate structures, and also promulgate and enforce safety regulations, but its power remains limited to interstate and foreign commerce; it does not control constitutionally all aviation. Difficult cases of minimum wages and maximum hours which require administrative rather than legislative solution can also be dealt with.

The new act places the investigating powers and duties in the hands of a distinct Air Safety Board, appointed by the President. The Board's findings are to be transmitted to the Authority, but are also to be made public by the Board.

Federal Juvenile Delinquency Act. The new act passed by Congress follows the practice of many States. (*See* JUVENILE DELINQUENCY.)

Food, Drug and Cosmetics Act. For the principal differences from the old law *see* FOOD AND DRUG LEGISLATION.

Industry. For legislation in industry, *see* LEGISLATION, INDUSTRIAL.

Motor Carrier Act. The act of 1935 was amended in the following important respects: (1) The Commission can determine what combinations of various types of motor vehicle shall be permitted as a single motor vehicle within the insurance and safety provisions of the regulations. (2) Exempted vehicles are limited to those transporting only

goods described in the subsection for hire. (3) The Commission has added authority in the granting of temporary permits to operate, in the suspension of rights, in its action on consolidations or mergers, and in supervision power. Short-term securities of $100,000 can be issued without necessity of Commission approval

National Housing Act Under this act, previous agreements to insure financial institutions against losses from certain types of loans were resurrected Insurance of long-term fully amortized mortgage loans is also permitted, within certain limits, on newly constructed and owner-occupied houses, as well as on large-scale housing projects.

Revenue Act of 1938. Among the changes effected by the new Act are materially increased tax rates on the special class of corporations, regardless of the amount of net income. Further changes impose more severe tax rates on capital gains than were levied by the previous act. The 1938 Act does not allow even the $2,000 net loss deduction to individual taxpayers on their short-term capital losses.

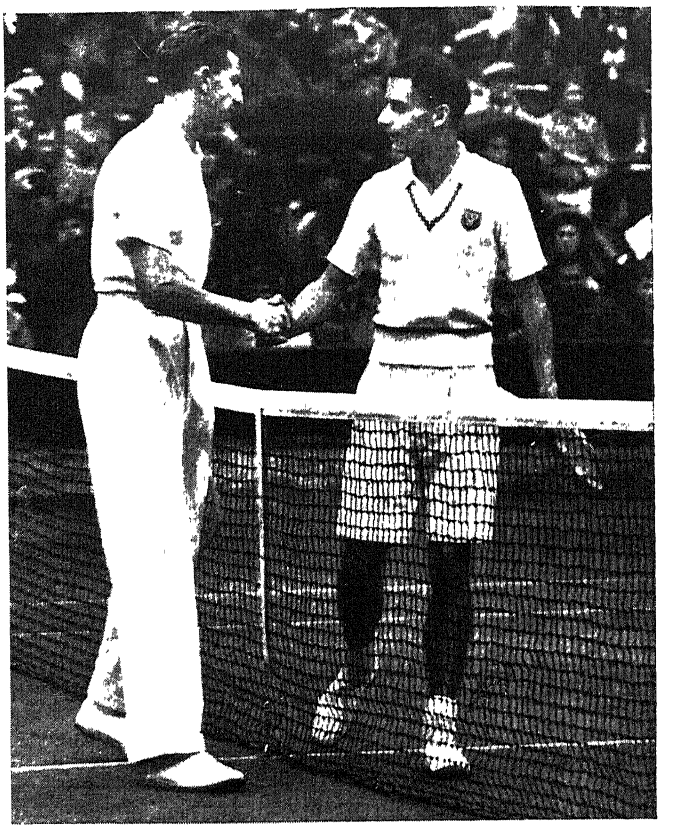
While the Revenue Act of 1938 tightened up the provisions as far as speculative gains are concerned, it has eased the burden on the investor's capital gains. Both the long-term and short-term capital gains and losses of the partnership are treated as the long-term or short-term capital gains and losses of the partners as individuals, pro rata, according to their partnership interests.

Another important change in the capital gain or loss provisions under the 1938 Act affecting all taxpayers is the inclusion as capital losses of losses resulting from worthlessness of stocks or bonds. (*See* also INCOME-TAX.)

Wheeler-Lea Amendment. By the enactment of the Wheeler-Lea Amendment to the Federal Trade Commission Act for the regulation of trade, the scope of the Commission's jurisdiction was enlarged and its powers of investigation and enforcement greatly augmented. The Commission is no longer limited to the curtailment of monopolistic tendencies. It may now check the deceptive use of advertising media in connexion with food, drug, and curative devices and cosmetics Criminal as well as civil penalties are provided. The statute defines false advertisement as one, other than labelling, which is misleading in a material respect. (B. W.)

LAWN TENNIS. The first major lawn tennis championships of 1938 were held at Adelaide, South Australia, in January, and the Australian singles title was won by J. Donald Budge of California, who beat the nineteen-year-old native player, John E. Bromwich, in the final in three sets. Budge lost but seven games in this match. In June the American captured his second title of the year, when he won the French championship at the Stade Roland Garros, in Paris, defeating Roderich Menzel of Czechoslovakia in the last round in straight sets, and dropping only nine games.

Budge's victory at Wimbledon the next month was a foregone conclusion. He did not lose a set in the entire tournament, and only four games to H. W. Austin of England in the final. The chief interest was centred in this tournament on the women's singles, in which Mrs. Helen Wills Moody of California decided to return to active competition after three years' absence from the game. In succession she conquered Mrs. Hopman of Australia, Mrs. Glover and Miss Stammers of England, and Fru Sperling of Denmark, before beating her rival, Miss Helen Jacobs, in the final. To return to sport after three years, and then to defeat the best players in the world without the loss of a



Keystone]

D BUDGE BEING CONGRATULATED BY H W AUSTIN AFTER THE FINAL OF THE MEN'S SINGLES AT WIMBLEDON, 1938

set, marks Mrs Moody as one of the greatest players of her sex ever seen. The men's doubles was won by Budge and G. Mako, who beat H. Henkel and G. von Metaxa of Germany by three sets to one in the final; and the women's doubles by Mrs Fabyan and Miss Marble, who beat Mme Mathieu and Miss A. M. Yorke in straight sets in the final

Germany won the European zone of the Davis Cup in Berlin from Yugoslavia in late July. Australia defeated Japan in the American zone, and the two met in Boston, Mass., in August. The Australians won so easily that the German team was instantly recalled home. The Challenge Round was held on Sept. 3, 4, and 5, at the Germantown Cricket Club, Philadelphia, and resulted in a victory for the United States, three matches to two. Budge won both his singles against Quist and Bromwich, the Australian pair, but with Mako was badly defeated in doubles. Riggs, the new American singles player, saved the Davis Cup for the United States by his victory over Quist on the first afternoon.

In the contest for the Wightman Cup, held at Wimbledon in June, America beat Great Britain by five matches to two.

The American championships, held in September at the West Side Tennis Club, Forest Hills, Long Island, were marred by rain, which delayed the finals until the end of the month Miss Alice Marble of California won the women's singles from a strong field that included nearly every good player, save Mrs. Moody, who did not choose to compete. In the semi-final Miss Marble was twice within a point of defeat by Mrs. Sarah Palfrey Fabyan, but saved herself gallantly. Miss Nancye Wynne, the Australian, was completely out of touch in the final, and took only three games from Miss Marble. Budge, as expected, went through the men's singles with ease, tossing a set to his doubles partner, Mako, in the final. This was the only set he dropped in the tournament.

Budge thus becomes the first tennis player ever to win the Australian, French, English, and American titles in one year. Later in the year he turned professional, so that there will be an opportunity to see how he compares with such players as Perry and Vines. An open tournament, with amateurs and professionals of the highest standing competing, seems as far away as ever, while the men who control tennis remain at the head of what was once a sport and has now become commercial enterprise

LEAGUE OF NATIONS. The political authority and influence of the League suffered a further decline in 1938, in the non-political sphere, however, much useful and constructive work was accomplished.

The Committee set up to study the application of the principles of the Covenant decided, on Feb. 2, 1938, to communicate to the Assembly, without making recommendations, a number of informative reports, dealing with the question of universality, the separation of the Covenant from the Peace Treaties, regional pacts, etc, and to adjourn *sine die*. At the May session of the Council the Chilian representative regretted the Council's refusal to study the reforms which his government regarded as essential, and gave notice of Chile's intention to withdraw from the League. The Assembly, after considering the Committee's report decided, in order "to remove certain difficulties . . . which might be considered an obstacle to the entry of other States into the League", to recommend to States Members the acceptance of certain amendments "which altered neither the real effect nor the spirit of the Covenant" to bring about the formal separation between the Covenant and the Peace Treaties. (The Protocol was signed by 27 States.) It also invited suggestions from non-Member States for the wider development of technical collaboration between them and the League.

No formal proposal to amend the Covenant was adopted, although a number of States, including the Oslo States (who had defined their attitude to Article 16 in July) and the United Kingdom, made declarations to the effect that, while aggression against a Member of the League was a matter of universal concern, the application of sanctions (Article 16), either military or economic, could not be regarded as an automatic obligation.

A United Kingdom proposal to exempt Article 11 from the unanimity rule in order to facilitate its speedy application received overwhelming support, but was defeated in the Assembly (whose resolutions require unanimity) by the adverse votes of Poland and Hungary.

Swiss Neutrality. At its meeting in May, the Council, recognizing the special position and perpetual neutrality of Switzerland, adopted a resolution declaring that Switzerland, exempt since 1920 from the application of military sanctions, would not in future be invited to apply sanctions of any kind or in any manner. It also noted that Switzerland was prepared to defend her neutrality, to remain a Member of the League, and to continue to give all facilities to the League. M Litvinov abstained from voting, on the ground that the resolution might constitute a precedent dangerous to the League.

Abyssinia. The Council also considered, at the request of the United Kingdom, the "consequences arising out of the existing situation in Ethiopia". On May 12 the United Kingdom representative, Lord Halifax (who on May 10 had explained the Anglo-Italian Agreement as a contribution to peace), drew attention to the anomalous position arising out of the fact that certain members of the League had already recognized, explicitly or implicity, Italy's sovereignty over Ethiopia. His government, he said, held the view that each Member of the League might


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P. Popper]

AN AERIAL VIEW OF THE PALACE OF THE LEAGUE OF NATIONS AT GENEVA

without disloyalty or condoning Italy's action, decide for or against recognition for itself in the light of its own situation and obligations. For all practical purposes Italy virtually controlled Ethiopia, and that situation could not be changed otherwise than by going to war. The Emperor Haile Selassie was invited to the Council table, and delivered an eloquent appeal, denouncing the abandonment of Ethiopia by a number of Powers " themselves threatened by aggressors and realizing their own weakness ". He claimed that only the Assembly was competent to decide the question raised. In spite of this appeal, the majority of the Council (with the exception of the representatives of the U.S.S.R., New Zealand, Bolivia, and China) were in favour of Lord Halifax's proposal, and the President summed up the discussion in this sense, no resolution or declaration being proposed or adopted.

China. On Feb. 2 the Council, which remained seized with the Chinese Appeal, adopted (Peru and Poland abstaining) a resolution reminding League Members of the Assembly resolution of Oct. 6, 1937, and expressed its confidence that States in consultation with other similarly interested Powers " will examine the feasibility of any further steps which may contribute to a just settlement ". At its May session the Council again discussed the Chinese appeal and allegations that Japan was about to employ gas, and on May 14 adopted (with the abstention of Poland in regard to the first part) a resolution urging Members of the League " to do their utmost " to give effect to previous recommendations and consider sympathetically requests from China, and recalling that the use of toxic gases was condemned by international law.

During the Assembly China formally appealed to the Council for action under Article 17. Japan having refused membership of the League for the purposes of the dispute (as provided by that Article), the Council declared on Sept. 30 that League Members were entitled " to adopt individually " the measures provided for in Article 16 (sanctions), noting, however, that all the elements necessary for co-ordinated action " are not yet assured ". The Assembly also voted credits amounting to 1,750,000 Swiss francs for the anti-epidemic campaign in China. As a result of this resolution, Japan, on Nov. 3, withdrew her representatives from the I.L.O. and the technical services of the League, but not from the Permanent Court of International Justice.

Spain. On May 11 a draft resolution submitted to the Council by the Spanish representative, Señor del Vayo, inviting States Members to terminate the policy of non-intervention failed to secure unanimity in the Council. On Sept. 21, the Spanish government announced its decision to dispense with all foreign volunteers and requested the League to send a commission to verify their withdrawal. The Council acceded to this request, and decided to send another Commission to Spain to furnish technical assistance in providing food supplies for three million refugees from Nationalist territory in Republican Spain, where there was an acute shortage of food.

At the end of June, Turkey and France decided to settle the question of Alexandretta (*see* HATAY, THE) by bilateral negotiation and took the matter out of the League's hands; the League's Electoral Commission withdrew on June 29.

The Assembly adopted resolutions condemning as illegal the bombing of civilians and open towns, and also the use of chemical methods of warfare, and requested the United Kingdom to communicate to the League, for circulation to all States Members, the reports of the Committee of Investigation sent to Spain to examine cases of air bombing of civil populations.

The Assembly was in session throughout the period of the Czechoslovak crisis. No appeal was made by Czechoslovakia, and no action was taken by the League beyond the adoption of a resolution on Sept. 28 pointing out that recourse to war was no guarantee of a just settlement and would imperil the whole structure of civilization in Europe, and associating itself with President Roosevelt's appeal.

Technical Questions. An important development took place in 1938 in regard to the League's economic and financial organization. Recognizing that many of the studies on which governments need information lie on the borderline of social and economic policy, the Council appointed a Co-ordinating Committee, on which the technical bodies concerned were represented. The League's technical organization continued during the year its functions of collecting objective evidence from all over the world, the pooling of experience, and the provision of expert advice. As examples of the subjects covered in 1938 may be cited . the behaviour of tax systems during the last depression, nutrition (the number of National Committees being increased during the year), housing, agricultural credits, international loan contracts, and a model code of veterinary nutritional hygiene. A conference organized by the I L O. in February and March examined technical questions arising out of the organization of emigration, and recommended the establishment of a Permanent Committee on Migration for Settlement.

The Assembly, adopting the Economic Committee's recommendations, invited governments to ensure that measures to stimulate economic activity would not create disturbances in other countries ; to promote international trade by relaxing quotas, excessive tariffs and other restrictions, including exchange control ; and to consider the value of reciprocal trade agreements based on the principle of non-discrimination and the most-favoured-nation clause. It requested the Council to set up a committee of demographic experts, on which interested non-Member States might also be represented, and invited the economic and financial organization to extend its inquiry into agricultural credits, in the first instance to Argentina and Uruguay ; to study methods of providing medium-term credit to industry ; to study the causes of harmful deforestation and soil erosion and counteracting measures ; to advise upon the principles of monetary and credit policy suitable for agricultural countries and upon the fundamental principles of fiscal legislation ; to study with the Health and International Labour Organizations the physiological needs and consumption habits of different classes of the population in selected countries ; and finally to examine the influence on the standard of living of different classes of taxes, and of transport and distribution costs.

The Assembly also reviewed the work of the communications and transit organization during the past ten years, and appointed a new committee consisting of 18 members.

The humanitarian, social, and intellectual activities of the League were continued and expanded during the year.

Membership. The Assembly discussed the German Note, announcing the incorporation of Austria in the Reich, and decided that, as it did not constitute a notice of withdrawal, the obligation to continue contributions for the statutory two years did not apply. Two States gave two years' notice of withdrawal : Chile on May 14 (received June 2), and Venezuela on July 12.

On Sept. 21 the Dominican Republic, Greece, and Yugoslavia were elected to non-permanent seats on the Council in the place of Ecuador, Rumania, and Poland.

Mr. de Valera was elected President of the Nineteenth Assembly (Sept. 12–30).

The League entered the financial year 1938 with a cash surplus of 4,558,625 gold francs. The Budget for 1939 was fixed at 22,799,327 gold francs as compared with 22,682,183 gold francs for 1938, and 29,184,128 gold francs in 1937.

See also POLITICAL MIGRATIONS AND REFUGEE MOVEMENTS, MANDATES; DRUGS AND DRUG TRAFFIC

See Secretary-General's *Report on the Work of the League* 1937–38; *League of Nations Monthly Summary*; Information Section Press Communiques; Reports of Committees; *Journal of the Assembly*. (S. A. HE.)

LEATHER. After several years of experimenting there has been developed in the United States a stretchable leather which, when backed with a woven elastic material, lends itself readily to the production of several types of leather articles, and particularly to uppers for women's shoes. Reports indicate that important quantities of this leather were marketed in 1938. A new type of innersole material, made of fibre and leather scrap, but containing no rubber or latex, has been introduced to the shoe industry. This product resembles split leather innersoles and is said to be suitable for all types of shoes as it will stitch and cement satisfactorily.

Accelerated ageing tests have become recognized as a necessary technique of research in developing more permanent leathers, such as bookbinding, upholstery, bag, and belting leathers. The oxygen bomb test, whereby the leather is exposed in a bomb containing initially an atmosphere of oxygen at 100 lb. pressure per square inch, and aged at 100° C for seven days, has been proposed recently for this purpose. Recent studies with belting leather show no correlation between the tensile strength of the leather and the angle of weave, the prevailing direction in which the fibres run, which had sometimes been considered an index of quality.

For considerably shortening the time of tanning, the quick freezing of hides at a temperature as low as − 30° F. has been proposed. An increased degree of tannage and improved yield of leather are said to be other advantages. In the tanning of heavy leathers it is claimed that the process can be carried out in twenty days less than the customary time of about 120 days. The freezing must be done under controlled conditions so that the fibre bundles in the hide will be loosened and expanded but without rupture of the cells of the fibres.

In those countries facing a shortage of staple hides and skins the recent movements to develop raw materials of marine origin are being pushed vigorously. At least two plants—one in Japan and another in Germany—have been erected for tanning shark and other fish skins. A recent exhibition in Germany was composed entirely of men's and women's shoes made of various fish-skin leathers. Many in the trade feel that the production of leather from fish skins will play an important part in the German leather industry under the four-year plan.

Numerous regulations have been issued recently in foreign countries, particularly in Germany and Japan, restricting the domestic use of leather, in order to reduce imports of raw hides and skins that had to be paid for in foreign exchange. As a result of these restrictions the development of suitable substitutes for leather is being fostered. It is interesting to note that in those countries where the domestic use of leather has been restricted exceptions have been made for articles destined for export trade.

The estimated production for 1938 of staple hides and tanned skins in the leading export countries and in the world was (in thousands):

	United Kingdom	United States	France	Germany	World
Cattle hides	10,960	19,410	7,500	9,750	101,515
Calf and kipskin	7,800	12,500	7,895	12,187	72,995
Goat and kidskins	13,195	42,783	8,210	6,450	78,863
Sheep and lambskins	8,610	35,106	11,612	9,865	88,067

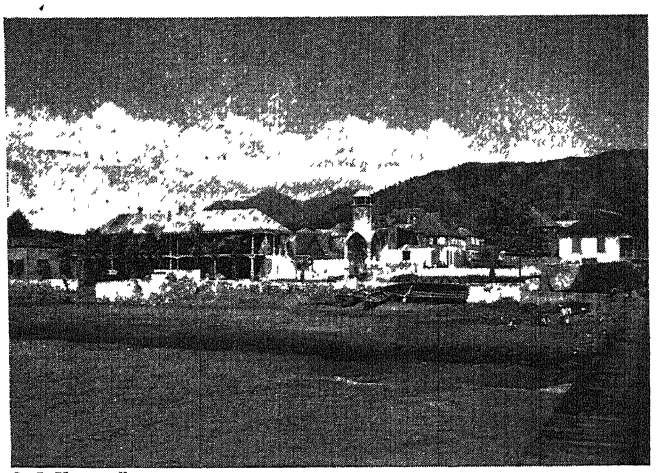
Exports of these countries in 1937 were: the United Kingdom, £4,553,600; Germany, £3,484,600; the United States, £3,467,000; and France, £2,018,800.

LEATHES, SIR STANLEY (MORDAUNT), British scholar and civil servant, was born in London on May 7, 1861, and died on July 25, 1938. He was educated at Eton, and at Trinity College, Cambridge, of which he was a Fellow from 1886 to 1904. He was secretary to the Civil Service Commission from 1903 until 1907, when he became a Commissioner, being First Commissioner from 1910 to 1927. He was created a K.C.B. in 1919. Leathes' greatest contribution to scholarship was as co-editor, with A. W. Ward and G. W. Prothero, of the *Cambridge Modern History* and as a contributor to that work; and he also published, among other books, *The People of England*, Parts I and II of which (*The People in the Making* and *The People in Adventure*) appeared in 1915–16, and Part III (*The People on its Trial*) in 1923.

LEBANON: *see* SYRIA AND LEBANON.

LEBON, ANDRÉ, French politician and historian, was born at Dieppe on Aug. 26, 1859, and died in Paris on Feb. 17, 1938. He was minister of commerce in 1895, and of Colonies from 1896 to 1898. His publications included *L'Angleterre et l'émigration française; L'Allemagne politique; Cent ans d'histoire intérieure;* and *La Politique française en Afrique de 1896 à 1898*. He was also honorary chairman of the Messageries Maritimes, vice-chairman of the Suez Canal Company, and auditor of the Crédit Foncier.

LEBRUN, ALBERT (1871–), French statesman; was born in Mercy le Haut (Meurthe et Moselle) on Aug. 29, 1871. At first he devoted himself to engineering, but turned to politics about 1900. He was minister of the colonies, 1911–13 and 1913–14; minister of war, 1913; and minister of blockade and of liberated regions, 1917–19. He became a Senator in 1920, and was president of the Senate, 1931–32. In May 1932, after the assassination of Paul Doumer, M. Lebrun became president of the republic. In 1934, when the Stavisky scandal and the Paris riots led to a crisis, he appealed to M. Doumergue (ex-president) to form a national government. He exerted a steadying influence on the unsettled political situation in France during 1937 and the early part of 1938, and in April, after M. Blum's resignation, called upon M. Daladier to form a ministry. In July he entertained the King and Queen of England during their Paris visit and received the G.C.B. In September he was in frequent consultation with M. Daladier in connexion with the German-Czech crisis, and in October, at a council of ministers in the Elysée, thanked him on behalf of the nation for his part in securing a peaceful settlement at Munich. M. Lebrun's term of office



S J Hayward]
THE WATERFRONT, MONTSERRAT, LEEWARD ISLANDS

expires in 1939. He has a son and a daughter.

LEEWARD ISLANDS. The Governor spent six months' leave in England during 1938 Lord Moyne, chairman, and four members of the West Indies Royal Commission reached the Colony in December Dominica will be transferred to the Windward Islands on Jan 1, 1940

An economic survey of the Colony was started under the auspices of the Imperial College of Tropical Agriculture, with a grant provided by the Colonial Development Fund. To open up agricultural districts, extensive road construction was started in Antigua and Dominica. A large cotton ginnery in St. Kitts was destroyed by fire. (A. A.)

Area and Population :
Area, total, 725 sq. miles (Antigua, 170 sq miles, St Kitts, including Nevis and Anguilla, 152 sq. miles, Dominica, 304 sq. miles; Montserrat, 32 sq. miles, Virgin Is., 67 sq. miles).
Population, total (est. Dec. 31, 1936) 139,759. (Whites, 1931 census, 2,836).
Chief town and capital : St. John, Antigua (pop. 10,000).
Governor : Sir G J. Lethem, K C.M G.
Language : English.
Production 1936 :
Antigua : sugar, 21,200 tons ; cotton (export), 117,380 lb.
St. Kitts : ,, 28,174 tons ; ,, (,,) 508,295 ,,
Nevis : cotton, 219,216 lb.
Dominica : limes and lime products (export) £19,026.
,, essential oils (mainly bay leaf) 21,286 lb.



S. J. Hayward]
SUGAR ON THE ARROW, ST. KITTS, LEEWARD ISLANDS

Montserrat : cotton (export) 605,176 lb ; tomatoes £6,975.
,, limes and lime products (export) £4,404.
Overseas Trade 1936 :
Imports, £662,384, Exports, £631,509.
Roads : motor 322 miles.
Finance :
Revenue (est. 1938) £42,558, expenditure, £42,558
Public Debt (Dec 31, 1936) £327,554.
Education 1936 :
Elementary schools, 114, scholars, 25,613.

LEGISLATION, INDUSTRIAL. During 1938 many Acts dealing to a greater or a less extent with industry received the Royal Assent, among others being the Coal Act, the Food and Drugs Act, the Hire Purchase Act, the Herring Industry Act, the Young Persons (Employment) Act, the Holidays with Pay Act, the Bacon Industry Act, and the Road Haulage Wages Act. (*See* PUBLIC STATUTES OF THE UNITED KINGDOM)

So far as the manufacturing industries generally were concerned, the year was mainly devoted to becoming familiarized with the working of the important Factories Act, 1937 (see *Ency Brit. Book of the Year*, 1938, p. 372), which came into operation on July 1. The Chief Inspector of Factories in his annual report published in August noted that, as the changes it embodied were both numerous and complex, and time would be necessary to secure their complete working, the inspectorate would not unreasonably press employers who were making a real effort to comply with its provisions. Many of the Act's requirements, however, were of a comparatively simple nature, such as had long been in force among progressive firms, and these should be used at once in an attempt to raise the standard of industry generally by improving conditions in the more backward factories.

The Herring Industry Act, which sets up a new board, and the Bacon Industry Act deal with conditions appertaining to their respective trades, particularly with marketing and the expansion of markets ; but the Coal Act is of much wider importance in that its nationalization of royalties, which is to be completely effective by July 1, 1942, adversely affects the incomes of numerous private persons and public corporations, not excepting the Church of England, which will lose many thousands of pounds annually. Landowners in Great Britain have imposed a levy on all coal extracted from their land since Elizabethan times, and the annulment of this practice by the Act removes what has hitherto been a powerful argument for the nationalization of the whole coal-mining industry. An expert inquiry had fixed the amount of compensation payable in respect of all principal coal hereditaments at £66,450,000, and besides confirming this figure the Act (passed May 26) reconstitutes and widens the power of the Coal Commission which, in 1939, will renew its efforts to effect amalgamations of colliery undertakings. The main points of opposition were that, while it conceded the principle of public ownership, it left the coal to be exploited by private enterprise for private gain, and that it did not do enough for the actual coal-getter.

The Holidays with Pay Act, a permissive measure which became law on July 29, empowers trade boards, agricultural wages committees, and the Road Haulage Central Wages Board to direct that holidays with pay should be given to the workers whose wages they regulate, and enables the minister of labour to assist in the administration of voluntary schemes for holidays with pay in any industry. It follows the report (April 1938) of a committee set up by the ministry the previous year An inter-departmental committee

has now been established to stimulate holiday arrangements in their educational, transport, lodging, and other aspects

The Road Haulage Wages Act, 1938, was passed, after the withdrawal of a previous bill, on May 27; it makes provision with respect to remuneration of persons employed in connexion with the mechanical transport of goods by road, and arranges for the amicable settlement of disputes in matters affecting such transport, the main intention being to help a rapidly growing industry towards settled self-government on wage rates. Since its passing, central and regional committees, representing parties interested in the industry, have been set up, and are now functioning.

In the United States, the Fair Labour Standards Act (passed on June 27 and effective from October 24) had for its purpose the elimination of conditions detrimental to a minimum standard of living without substantially curtailing employment or earning power.

A Wage and Hour division has been created in the Department of Labour directed by an administrator appointed by the President

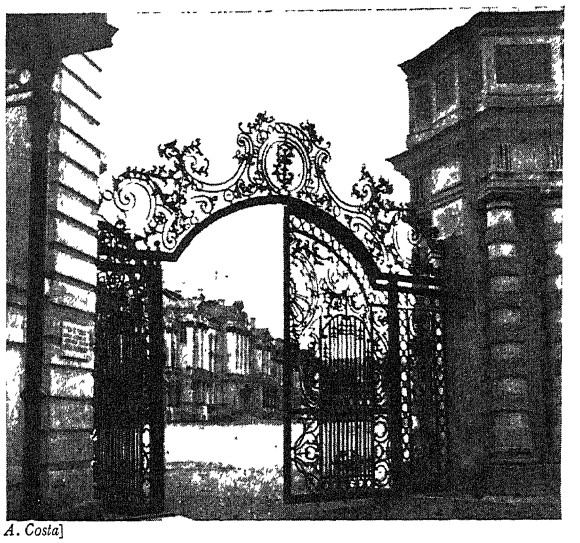
A minimum wage rate of 25 cents per hour is provided for the first year for all industries engaged in inter-state commerce and it is within the power of the administrator to prescribe a rate as high as 40 cents an hour. The minimum rate for six years thereafter is established at 30 cents, and will reach 40 cents after seven years from the effective date of the Act It is the function of the administrator, preparatory to promulgating wage orders and with a view to establishing a 40 cents minimum as rapidly as possible without curtailing employment, to convene industry committees which are to recommend wage rates and classifications for their respective industries or subdivisions thereof.

No employee engaged in inter-state commerce or in the production of goods for such commerce is permitted a work week longer than 44 hours for the first year of the Act's operation, longer than 42 during the second, and longer than 40 after the expiration of the second year, unless compensation at an overtime rate is granted. Departures from the standard schedule resulting either from collective bargaining agreements certified by the National Labour Relations Board or from the seasonal nature of the industry are not to be deemed a violation of these provisions.

Goods may not be transported in inter-state commerce which have been produced in an establishment in which oppressive child labour has been employed, and it is also unlawful to transport, deliver, or sell goods produced in violation of the hours or wages provisions, or to discharge or discriminate against any employee who has testified in any proceeding under the act. The administrator, is empowered, by his representatives, to investigate and gather data regarding wages, hours, and other conditions of employment, and to enter and inspect such places and records, and question such employees as he may deem necessary. Compulsory attendance of witnesses and the production of books, papers, and documents is also provided for.

LENGLEN, SUZANNE, French lawn tennis player, was born at Compiègne on May 24, 1899, and died in Paris on July 4, 1938. An account of her career may be found in the *Ency. Brit.*, vol. 13, p. 911. She played little in public as a professional, but recently gave much of her time with considerable success to a State-aided lawn tennis school for children in Paris. Her death followed a short and rapid illness, and was caused by acute anæmia.

LENINGRAD. The second city in the U.S.S.R.; population (1935) 2,739,800. The year 1938 has further increased the importance of the town as an industrial and ship-building centre and naval base. Several industrial plants and some of the famous bridges across the river Neva were reconstructed. On Oct. 1 a television centre, the first in the U S.S R., was opened and was entirely of Soviet make. The plan for the building of a 75-mile long underground railway was also approved in spite of the extremely difficult nature of the subsoil. The first section will cover about nine miles. In 1938, as in every year since 1932, two successful fur auctions were held. The result of the March auction exceeded $2½ millions, and at the July auction also firms from more than ten countries were represented. The bulk of the sales went to the U.S.A., England, and France. The Leningrad Conservatorium in February celebrated the 75th year of its existence, and a special Commission was appointed to arrange for the celebration of the 120th year of Leningrad University in Feb. 1939. In October a monument was erected on the grave of the famous Russian physiologist Pavlov at the Volkov cemetery, and in the same cemetery the literary necropolis for deceased Russian authors of the second half of the nineteenth and the first half of the twentieth centuries is shortly to be rearranged. The remains of Turgenev, Saltykov, Goncharov, and Nekrasov, for example, are to be removed thither from their present resting-places. (S. YAK.)



A. Costa]

PUSHKIN (DETSKOYE SELO), NEAR LENINGRAD. ENTRANCE TO THE OLD PALACE, NOW PART OF A CHILDREN'S COLONY

LIBERAL PARTY, THE. The alignment of professing Liberals in Great Britain remains unaltered. One section, describing itself as the Liberal Nationals, supports the government, and its representatives in the House of Commons, 33 in number, under Sir John Simon, vote consistently with the Conservatives. Another section, under Sir Archibald Sinclair, sits in opposition, but is only nineteen strong. In the House of Lords, where the Marquess of Crewe leads the party, the cleavage is not so marked. In two by-elections, during the year, where Liberals fought as such, they had no success; but in Bridgwater, where a Liberal stood as an Independent, he won the seat from the Conservatives. The Liberal opposition took a strong line of protest against the dismemberment of Czechoslovakia, and issued a manifesto in October offering co-operation, to the temporary exclusion of all other differences, with any political section which might be hostile to the government's foreign policy. They were prepared however to accept the necessity for improving the national defences. (ME.)

LIBERIA. There has been considerable improvement in the administration in recent years, in consequence of which the United States has granted recognition to the government, previously withheld. Difficulties with the Kru tribes have now been settled. The principal educational centre is Liberia College: it is proposed to send Liberian students to Achimota College, in the Gold Coast. The state expenditure on education amounts to about eleven per cent of the revenue. There are no railways: motor roads exist in the coastal belt, and are being improved. Rubber is exploited by an American company, Firestone Plantations.

Area and Population:
Area *c* 46,000 sq. miles.
Population (est. Dec. 31, 1936) 2,500,000.
Chief Town (capital) Monrovia (pop. 9,700).
President. Edwin Barclay.
Language, official. English.
Religion. Christian (Protestant).
Production 1937 (export figures):

Rubber	$1,032,309
Palm oil and kernels	$514,369
Piassava	$181,994
Coffee	$148,698
Gold, raw (2,457 oz. troy)	$65,063

Overseas Trade 1937:

Imports, merchandise $1,958,268 : specie	$59,000
Exports, domestic	$1,991,161
Re-exports	$39,430

Roads: suitable for motor traffic . . . *c.* 150 miles
Finance and Banking:

Revenue (1936)	$782,746
Expenditure (1936)	$713,870

Public Debt (Dec. 31, 1937), External $1,737,000; Internal $291,942. Currency: Liberian dollar, exchangeable at a fixed rate of $4.80 = £1 sterling.

LIBRARIES. Although nothing spectacular in library development can be recorded to mark the year 1938 as an outstanding one, there has been much activity and all types of libraries, national, university, public, and special, have reported steady progress and increasing popularity. Evidence of this can be found everywhere in the new buildings and extensions which have been completed during the year, and the many partly completed buildings which will be open to readers in the immediate future.

British Libraries. The reconstruction work in the North Library at the British Museum has resulted in the addition of a mezzanine floor providing more accommodation for the Department of Egyptian and Assyrian Antiquities, and the lighting, both natural and artificial, has been much improved. In the Reading Room improvements have been effected such as the installation of extra booklifts and conveyors to give quicker service to the reader, and an extension of the hours of opening in the evening from six to seven p.m. for an experimental period of one year. North of the British Museum, the great new building of the University of London has received the University's Library previously at South Kensington. The move, which necessitated the transportation of 320,000 volumes, was carried out without the loss of or damage to a single volume and was a triumph of careful organization. At the University College nearby a new sectional library has been established in Foster Court, and this, the Foster Court Science Library, will accommodate nearly 60,000 volumes to serve the Departments of Zoology, Botany, Geology, and Geography. Visitors to Oxford can now see something of the progress which is being made in the building of the New Library in Broad Street, for the mass of steel work above ground is being covered by brick and stone. The portion below the ground level



Lancashire Education Committee]
LITHERLAND BRANCH LIBRARY, PRESTON, LANCASHIRE

and the tunnel which links the New Library with the Old Library are practically completed. Farther north, at Liverpool, the building presented to the University of Liverpool by the late Harold Cohen was opened by Lord Baldwin in May. Costing approximately £95,000, this modern university library is a great asset to the north-west of England, and is attracting visitors interested in library planning from all parts of the world. Provision has been made for future additions to the stack, which will accommodate about one million volumes.

The creation of new housing estates on the outskirts of many cities and towns in Great Britain has brought about the need for branch libraries to serve the inhabitants, and throughout the year cheerful modern buildings have been erected by county and municipal authorities. Altogether, about forty new public library buildings have been erected. The successful establishment of these branches has in no way diminished the use of the central libraries of the towns, and the remodelling of old buildings or substitution of new ones at such places as Bolton, Torquay, Salford, Worksop, and Sale amongst others testifies to this. In the heart of the West Riding of Yorkshire, at Huddersfield, a fine new central library is rapidly approaching completion to continue this county's splendid chain of modern library buildings, as exemplified by the Brotherton Library at Leeds University and the Sheffield Central Public Library. The remarkable development of public libraries in recent years is shown, to some extent, by the latest statistics, which record that over eight and a half million people are registered readers at municipal and county libraries, and that during the year ended March 31, 1938, they borrowed over 237 million books The number of volumes contained in these libraries is approximately thirty millions.

The National Central Library and the regional library systems which now cover the whole of England and Wales, and together form a great national system of co-operation, continue to meet the increasing demand for non-fiction books once beyond the reach of many readers. The National Central Library has its own stock of over 150,000 volumes, but it has also, through its outlier libraries and the regional systems, access to about twenty-one million books in other libraries throughout the British Isles. As a national centre for the supply of scarce books and bibliographical information, and as an international service, the National Central Library performs work unequalled else-

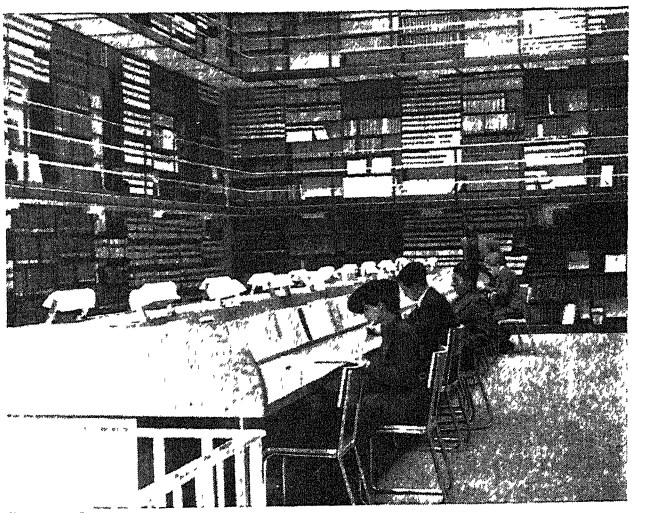
where in the world, but its full work in this direction is still hampered by insufficient income. An important development during the year in connexion with this Library has been the establishment of a Bureau of American Bibliography, the material in which is available to all librarians and also to other persons wanting information about American books.

British Empire Libraries. In South Africa, where a rapidly developing public library service is becoming widely known, mention should be made of the establishment of library centres in small municipalities in the Transvaal on the lines of the English county system, and also of the taking over by the local authority of the management of the Durban Public Library, with the consequent abolition of subscriptions for the use of the lending library. From New Zealand, too, comes a report of the development of the library service in rural areas, and in Australia the foundation of an Australian Institute of Librarians and the activities of the Free Library Movement are drawing much-needed attention to the potentialities of the library service. In all these countries, as in Canada and India, the realization of what a good library service means is being shown by all sections of the community, and further developments are bound to take place.

European Libraries. In Belgium the new national library to be erected shortly in Brussels as a memorial to the late King Albert promises to be a notable addition to the great modern buildings of our time, and in Bulgaria also a new state library is planned. In Finland plans are well advanced for the extensions to the famous University Library at Helsingfors, and, in fact, in almost every country there is much activity, details of which must be omitted in this short account. Brief mention can be made of the modernization of the re-opened Popular Library at Jena (Ernst Abbé Library) and the Municipal Library at Kiel; the improvements in the Hamburg Popular Library; the reorganization and rebuilding of the Breslau Popular Libraries; the development of a regional library service for rural communities in France in the Department of the Marne and the region of the Aisne by the use of the travelling library or "bibliobus"; the opening of a fine new library for the public at Warsaw; and the amazing growth of the library movement in Russia, with vast numbers of "mass", county, and university libraries in addition to small libraries in almost every factory and institution.

The Library Association. The Library Association was founded in 1877 and received its Royal Charter in 1898. Recognized since that date as the representative body for libraries and librarians throughout the British Empire, its chief objects are to unite all persons engaged or interested in library work by holding conferences and meetings for the discussion of bibliographical questions and matters affecting libraries; to promote the better administration of libraries, and whatever may tend to the improvement of the position and qualifications of librarians; to watch legislation affecting public libraries; and to promote and encourage bibliographical study and research. It also holds examinations in librarianship and issues certificates of efficiency.

The total membership, which is not confined to any country or to the library profession, is 6,039, and the Professional Register contains the names of over 1,800 qualified persons of whom 902 are Fellows and 898 Associates. Special sections of the Association such as the University and Research Section, the School Libraries Section, and so on, have been organized, as well as branches in different areas, and opportunities for personal contact and interchange of views are presented by the meetings arranged by these sections and branches. Opportunities of this kind on a larger scale are afforded by the annual conference which is held at a convenient centre each year in June. A ceremony of considerable interest took place in connexion with the 1938 conference, held at Portsmouth and Southsea, when a visit was paid to the village of Niton, Isle of Wight, where, over a grave in danger of being forgotten, a tribute was paid to the memory of Edward Edwards, the pioneer in the movement towards the formation of public libraries.



P. Popper]

THE LIBRARY FOR MATHEMATICS, UNIVERSITY CITY, ROME

The headquarters of the Association are at Chaucer House, London, where an Information Bureau and a representative library of books, periodicals, and pamphlets illustrating librarianship, as well as plans, photographs, and pictures of libraries and library equipment, are maintained. The official journal is the *Library Association Record*, published monthly, and amongst its other publications are many text-books and such annuals as the *Subject Index to Periodicals*, *The Year's Work in Librarianship*, and the *Library Association Year Book*.

BIBLIOGRAPHY. For further information about libraries consult: McColvin, L. R. *ed. A Survey of Libraries* (London, 1938); *The Year's Work in Librarianship* (London, 1929 onwards); Newcombe, L., *Library Co-operation in the British Isles* (London, 1937). (D. C. H. J.)

United States. From information available it may be said that appropriations in the United States for tax-supported libraries were not increased in 1938 to the extent hoped for, in view of the improved situation of 1937 as compared with the years just preceding. There was little if any improvement in library salaries, but conditions of employment were better, and most of the 1938 graduates of library training schools had obtained positions by the end of the year. The diminishing returns from invested funds are a matter of growing concern to libraries and similar institutions supported in whole or in part by income from endowments. The prospect is far from encouraging.

In recent years the appropriations made in many States for the extension and improvement of public and school libraries have been heartening and significant. They have usually been the result of careful planning and active campaigning by State organizations. The library service division of the U.S. Office of Education began operations in January with an excellent staff chosen under civil service regulations. The Harrison-Thomas Fletcher Bill to provide Federal aid for a six-year programme for

education, including rural library service, has the endorsement of the Executive Board of the American Library Association. The Bill, based on the report of the President's Advisory Committee on Education (Feb. 1938), was introduced in the 1938 Session of Congress. It was reported by the Senate Committee on Education and Labour and placed on the Senate calendar, but no action was taken in the House. It is expected that the Bill, somewhat revised, will be introduced early in the 1939 session. Of interest to libraries was the President's proclamation (Oct. 31, 1938) reducing the domestic postal rate on books to 1½ cents a pound. The new rate was made effective from Nov. 1, 1938 to June 30, 1939; its continuance after that date will require action by Congress.

The 1937–38 report of the Board of Education for Librarianship (American Library Association) lists 29 schools of various types accredited by the Board as meeting its standards; all are connected with teaching institutions On Nov. 1, 1937, the total enrolment was 1,583; the number of graduates in 1938 was 1,058. In addition to scholarship funds provided by individual schools, the Carnegie Corporation continued its aid by appropriating $9,000 for the United States and Canada for 1938–39. In 1937–38 the Corporation also voted a grant of $250,000 to Columbia university for its school of library service to be used in part ($150,000) for the endowment of a professorship (the Melvil Dewey Professorship of Library Service, of which Ernest J. Reece is the first incumbent), and in part for maintenance.

Legal certification of librarians as to education and training now applies to public libraries in eleven States, to county libraries in ten, and to tax-supported college and university libraries in five. Twenty-six States and the District of Columbia require certification for service in school libraries, usually by State departments of education.

The Board of Education, at the request of Indiana library associations, undertook in 1938 a survey of library personnel and training agencies in the State, and its report is now in progress. The Michigan Library Association also requested a similar survey which the Board agreed to sponsor and support. The survey was made in the autumn of 1938 by Professor John S. Cleavinger of the School of Library Service, Columbia university, and his report is now in preparation.

The Board on Salaries, Staff, and Tenure (created by the Council of the American Library Association in June 1937) under the chairmanship of Paul North Rice prepared a report on *Classification and Pay Plans for Municipal Public Libraries*, submitted to the Council in Dec. 1938, which should be of great value to public library authorities and to public officials. The Board is also studying the question of civil service in its relation to libraries.

The book *Resources of American Libraries* was admirably discussed by W. W. Bishop in the *Library Quarterly* for Oct. 1938. The survey of *Resources of Southern Libraries*, compiled by R. B. Downs under a grant from the General Education Board, is the first of such regional studies and should prove a valuable aid to scholarship. The union list of the publications of *International Congresses and Conferences*, 1840–1937 (N.Y., 1938), available in libraries of the United States and Canada, compiled by Winifred Gregory under the auspices of the Bibliographical Society of America, is of unusual importance. A new edition of the *Union List of Serials in Libraries of the United States and Canada* (first published 1927), and a revision of the A. L. A. *Catalogue Code* (1908) in co-operation with the (British) Library Association are in preparation; the first undertaking is made possible by a grant from the Rockefeller Foundation, the second by support from the Carnegie Corporation.

Experiment with and discussion of microphotography (*see* PHOTOGRAPHY) continue apace. The first issue of the *Journal of Documentary Reproduction* appeared in the winter of 1938. Published with the aid of the Carnegie Corporation, it is a "quarterly review of the application of photography and allied techniques to library museum and archival service". A project for filming English books before 1550, to which some sixteen libraries have subscribed, has been under way for more than a year. Of interest also is the Harvard University Library project, already begun, for filming a select number of current foreign newspapers. W. E. Wright discussed the cataloguing of microfilms in the *Library Journal* for July 1938, and the Columbia University School of Library Service has just announced a course in microphotography for libraries.

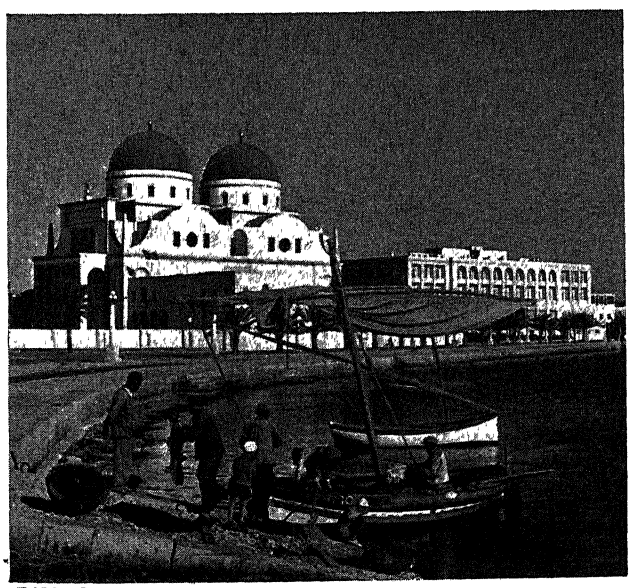
The Library of Congress annexe has been completed and the moving of books and staff has been begun. Work on the central library building for Brooklyn (N.Y.) is progressing; it should be ready for occupancy late in 1939. During 1938 the following college and university library buildings were completed or dedicated: Albion college, Albion, Mich.; Drake university, Des Moines, Iowa (Cowles Library); Franklin and Marshall college, Lancaster, Pa. (Fackenthal Library, cost $250,000); Manhattan College, New York city; Milwaukee-Downer college, Milwaukee, Wis. (Chapman Memorial Library); St. Bonaventure college, St. Bonaventure, N.Y. (Friedsam Library); Salem college, Winston-Salem, N.C.; Texas College of Mines and Metallurgy, El Paso (cost $100,000; capacity 120,000 vols); University of Virginia (cost $950,000); Westminster college, New Wilmington, Pa. (Ralph Gibson Memorial Library; to serve town and college; cost $155,000; capacity 75,000 vols.); Willamette university, Salem, Ore. (cost $95,000; capacity 30,000 vols.).

Under the terms of a Bill signed by President Roosevelt June 21, Herbert Putnam, Librarian of Congress since March 13, 1899, will become Librarian Emeritus upon retirement. By his directing genius, to use the expression of W. W. Bishop (see *Library Journal*, Aug. 1938), he has made the Library of Congress in all but name a national library. Arthur E. Bostwick, for 28 years the distinguished librarian of the St. Louis (Mo) public Library, resigned March 1 to become associate librarian, with Charles H. Compton, assistant librarian since 1921, succeeding him as librarian. After forty years of service Andrew C. Keogh has retired from the librarianship of Yale university, and has been succeeded (April 9) by Bernhard Knollenberg. James T. Gerould, librarian of Princeton university, has resigned because of ill-health. James I. Wyer, director of the New York State Library for thirty years, has retired. Linda A. Eastman, after 45 years of service in the Cleveland (Ohio) Public Library, has resigned the librarianship, and has been succeeded (Sept. 1) by Charles E. Rush, lately associate librarian of Yale university. Robert B. Downs, appointed director of libraries, New York university, July 1, has been succeeded by Carl M. White at the University of North Carolina. The deaths of the following librarians occurred during the year: Walter M. Smith, April 21; Mary Eileen Ahren, May 22; Jennie Dorkas Fellows, Oct. 10.

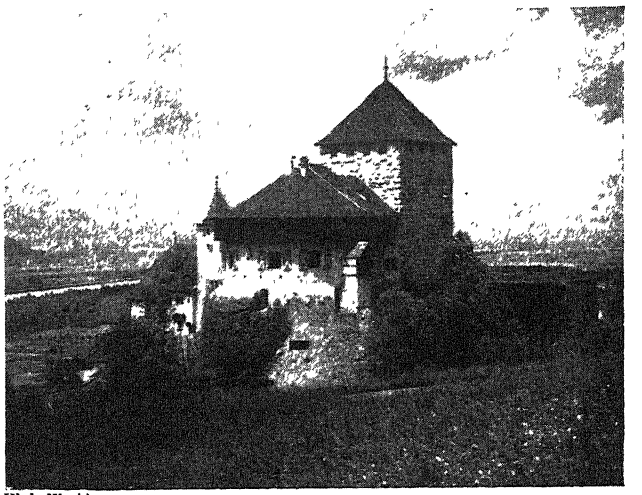
BIBLIOGRAPHY *Bulletin* of the American Library Association, Chicago, *Library Journal*, New York; *Library Quarterly*, Chicago, L R Wilson, *The Geography of Reading: A Study of the Distribution and Status of Libraries in the United States*, Chicago, 1938, Douglas Waples, *People and Print, Social Aspects of Reading in the Depression* Chicago, 1937; Alvin Johnson, *The Public Library—A People's University*, New York, 1938

LIBYA. The King of Italy paid a state visit to Libya in May, 1938. He attended combined army, naval, and air manœuvres, which were staged to demonstrate the possibilities of mechanized forces and air-transport in waterless country. In the autumn a vast emigration scheme was initiated to people and develop Italian North Africa Sixteen transports carrying 1,800 peasant families set sail (Oct 29) from Italian ports for Libya under the personal guidance of Air-Marshal Italo Balbo, Governor of Tripolotania. This emigrant fleet, unique in Italian if not in European history, was reviewed by Mussolini from a warship off Gaeta. Six agricultural centres with outlying farm-houses, each equipped for immediate occupation, were in readiness to receive them in the provinces of Tripoli and Misurata, and in Cyrenaica. The settlements were based on the concession of unoccupied lands taken over by the Crown, and each family took possession of a farm of 75 to 120 acres, with implements and live-stock. The discovery of subterranean water supplies along the North African coastal belt made the settlement possible. A decree issued in October designated these new Libyan occupied areas as forming an integral part of the kingdom of Italy. Plans were concluded for the transfer of 30,000 families, totalling nearly half a million souls, from the mainland to North Africa by the end of 1940. On Nov. 17 a "permanent commission for the repatriation of Italians abroad" was set up in Rome for the purpose of inducing some of the millions of Italian emigrants on foreign soil to return home for the development of the Italian Empire. (I. S. MU.)

Area and Population :
Area *c.* 682,000 sq. miles.
Population (est. Dec. 31, 1936) *c.* 900,000 (Italians, 1938, *c.* 70,000).
Chief Towns : Tripoli (cap.), Bengasi.
Governor-General. Marshal Balbo.
Languages. Italian and Arabic.
Religion. Mohammedan, Christian.



E.N.I.T.]
BENGASI, LIBYA. CATHEDRAL AND GRAND HOTEL BERENICE



Wide World
CASTLE LIECHTENSTEIN, NEAR VADUZ

Production 1937 :

Wheat	17,500 metric tons
Barley	38,000 ,, ,,
Olive oil	4,000 ,, ,,

Overseas Trade, Merchandise 1937 :
Imports 623,370,000 lire (from Italy, 522,439,000 lire)
Exports 122,404,000 ,, (to Italy, 108,132,000 ,,)
Communications 1937 :
Roads, fit for motor traffic . . *c.* 4,000 miles
Railways, open to traffic . . . . 271 miles
Aeroplanes :

	Arrivals and departures	Passengers carried	Mail and freight carried
Tripoli	1,252	9,780	272 metric tons
Bengasi	1,101	4,610	257 ,, ,,

Shipping, number of passengers : arrivals, 92,256
,, ,, ,, ,, : departures, 80,614

LIECHTENSTEIN, an independent European State, situated north-east of Switzerland, to which it is united in a customs and postal alliance.

Area and Population :
Area 77 sq. miles.
Population (est. Dec. 31, 1936) 12,000.
Chief Town, Vaduz (capital, pop. 1,710).
Ruler. Prince Franz Josef II, *b.* 1906, *suc.* 1938.
Language. German.
Religion. Christian (Roman Catholic 90 per cent).
Products. Corn, wine, fruit, wood, and marble.
Currency. Swiss franc, approx. 20·7 = £1 stg. (Dec. 1938).

LIFE INSURANCE. Although in Great Britain a statement of the new business completed during the previous year has, under the 1909 Act, to be included in the annual accounts filed with the Board of Trade, it is the custom of the majority of offices to make a preliminary announcement of their totals in the first few days of the new year. For many offices business completed in 1937 was a record. The figures announced early in 1939 of the new business completed in 1938 are in the majority of cases not so good. Such a falling off was not unexpected and may easily be accounted for by (*a*) the industrial depression coupled with its increase in unemployment, and (*b*) the political crises which discouraged the public from adding to their financial obligations. Some falling off also occurred in the purchase of immediate annuities. For staff schemes, which now form a significant fraction of the new business completed by some offices, employers hesitated to enter into contracts. Although in the aggregate the staff pension schemes completed during 1938 are probably less than in the previous year, there are now more offices seeking this class of business, and a number have even found it worth

while to set up a special administration to deal with such assurance.

A significant feature of the revenue accounts for life business published in 1938 was the continual fall in the net rate of interest earned on the invested funds. This is likely to continue in spite of the somewhat higher yield on new investments which may be secured in 1939 than in the past few years. A fall in the yield on good class fixed interest securities which form the bulk of life assurance funds, takes a number of years to show its full effect on the average rate earned by a life office. Investments are turned over slowly, either by redemption, sale, or in the case of mortgages, repayments, little by little, however, the yield tends to approach that of the market, as no matter what investment policy is adopted full realization of market appreciation in capital values is impracticable. The fall in the net yield has further been accentuated by the increase in the income-tax.

The reduction in interest rates has two effects on life business—the first is that bonuses on " with profit " policies are bound to be reduced, since surplus interest is the largest source of policyholders' profits, and the second is that offices must increase their non-profit premium rates in their prospectuses. There is a time lag in the first, but in the next few years, if present conditions continue, more moderate bonuses must be anticipated by participating policyholders. The second result has already become manifest and a number of offices have in the last few months increased their rates under non-profit tables, while others are likely to follow their example. Rates have increased from 1*s.* to 3*s.* per cent according to the class of assurance in question.

The House of Lords decision on *Beresford* v. *Royal Insurance Company* caused during the year very considerable interest. In effect, it held that in the case of sane suicide a deceased's estate could not benefit under a life-assurance policy. This decision may result in some alteration of the wording of the suicide clause in life policies to bring out the fact that the interests of third parties for value are fully protected at any time, whether it is a case of sane or insane suicide.

It is the custom of offices where a proposer contemplates incurring aviation risks, other than as a fare-paying passenger on a recognized air route, to exclude the risk from the cover of the policy unless the appropriate extra premium is paid. During the year life offices have attempted to provide from the statistics available a table of extra premiums to cover aviation risks both for the Royal Air Force and for civilian flying. These definite extras, based on reasonably reliable data should prove of service, both to the public, in view of the constant increase in flying, and to the offices themselves. (H. E. R.)

In the United States and Canada, despite depressed business conditions, which prevailed for the greater part of the year, life insurance companies maintained their position in 1938. The total amount of life insurance (excluding re-insurance) in force in these companies was estimated at $116,500,000,000 at the end of 1938, or about two-thirds of the total life insurance outstanding in the world. The total business placed during the year amounted to more than $12,500,000,000, which was about 20 per cent under 1937. During the year 1938 such companies paid out to policyholders and beneficiaries about $2,800,000,000, and their assets at the end of 1938 totalled nearly $30,000,000,000.

The mortality experience during 1938 was very favourable. The death rates from influenza, pneumonia, and tuberculosis were the lowest on record and automobile fatalities were at the lowest point since 1928.

While, on the whole, companies continued to experience difficulties in finding suitable investments for their new funds, some improvement in the mortgage market permitted larger investments to be made in this field than had been possible in recent years. Corporate bond and note financing remained at the low level, with refunding operations predominating. Nevertheless, the companies' holdings of corporate bonds increased during 1938 Holdings of United States Government bonds, which accounted for a large portion of the investments in recent years, increased. The rate of interest earned on the companies' assets continued low during the year.

As a result of various factors, annuity contracts and settlement options have attracted the public. The amount received by life insurance companies for annuities, and the amount of policy proceeds left with companies under settlement options, both continued high in 1938, at about three times the 1930 level. During 1938, most life insurance companies increased their annuity rates to reflect both the increased longevity among annuitants and the prevailing low rates of interest. For the same reasons companies have recently reduced the income to be guaranteed under settlement options in life insurance policies (effective only for policies issued beginning in 1939).

In the State of New York, whose legislation is so far-reaching as respects life insurance, important laws were adopted in 1938. One such law fixed the maximum legal rate of interest which may be charged on loans under Ordinary policies issued in that State after Jan. 1, 1939. Another prescribed the procedure under which savings banks in that State might issue life insurance policies. This law follows one which has existed in Massachusetts for some 30 years, but provides especially that New York savings banks issuing life insurance shall be subject to the same forms of departmental supervision and taxation as life insurance companies.

BIBLIOGRAPHY. *The Spectator (Life) Insurance Year Book*—1938, Philadelphia, Pa., *Proceedings*, Association of Life Insurance Presidents, Dec. 1938, New York,; Report of the Superintendent of Insurance of the Dominion of Canada, for 1938, vol. ii (*Life Insurance Companies*), Ottawa. (L. A. L.)

LINEN: *see* FLAX AND LINEN.

LITERARY PRIZES. The Nobel Prize for Literature 1938 (*c.* £8,000) was awarded to Pearl Buck (*q.v.*), American novelist. Other literary prizes included the following:

Great Britain. JAMES TAIT BLACK MEMORIAL PRIZES (about £250 in each class): biography, Lord Eustace Percy, *John Knox*; fiction, Neil Gunn, *Off in a Boat.* CARNEGIE MEDAL (best juvenile book, Library Association of Great Britain): Eve Garnett, *The Family from One-end Street.* HAWTHORNDEN PRIZE (£100): David Jones, *In Parenthesis.* HEINEMANN PRIZE (£40): Guy de Pourtales, *La Pêche Miraculeuse.* HODDER & STOUGHTON (£100): Hester Shepherd, *A Secret Life.* NEWDIGATE PRIZE POEM (Oxford University): Michael Thwaites, *Milton Blind.*

Canada. GOVERNOR-GENERAL'S AWARD: Stephen Leacock, *My Discovery of the West*; E. J. Pratt, *The Fable of the Goats*; Mrs. L. G. Salverson, *The Dark Weaver.*

France. ACADÉMIE FRANÇAISE. Grand prix de litterature (20,000 fr.): Tristan Derême. Grand prix du roman (10,000 fr.): Jean de la Varende, *Le Centaure de Dieu.* FEMINA PRIZE NOVEL (5,000 fr.): Felix de Chazournes, *Caroline ou le Depart pour les Iles.* FEMINA ANGLAISE (£40): Richard Church, *The Porch.* GONCOURT PRIZE

NOVEL (5,000 fr): Henri Troyat, *L'Araignée*. INTERALLIÉ: Paul Nizan, *Conspiration* PRIX PETITDIDIER (15,000 fr. Maison de Poésie). André Mary.

United States. JULIA ELLSWORTH FORD FOUNDATION Children's Book Contest ($3,000): Phyllis Crawford, *Hello, the Boat.* HOUGHTON MIFFLIN LITERARY FELLOWSHIPS ($1,000 in addition to royalties and advances): Maurine Whipple. JOHN NEWBERY MEDAL (most distinguished children's book, American Library Association): Kate Seredy, *The White Stag.* O. HENRY MEMORIAL AWARDS (best short stories): first prize ($300), Albert Maltz, *The Happiest Man on Earth*, second prize ($200), Richard Wright, *Fire and Cloud*, third prize ($100), John Steinbeck, *The Promise* POETRY (magazine) PRIZES: Anne Channing, Hilda Doolittle, H. H. Lewis, Willard Mass, D. S. Savage, Dylan Thomas, Belle Turnbull. PULITZER PRIZES ($1,000 in each class): fiction, John P. Marquand, *The Late George Apley*; drama, Thornton Wilder, *Our Town*; history, Paul A. Buck, *The Road to Reunion*; biography, Odell Shepard, *Pedlar's Progress*, and Marquis James, *The Border Captain*, and *Portrait of a President*; poetry, Marya Zaturenska, *Cold Morning Sky*. SHELLEY MEMORIAL AWARD (Poetry Society of America): Lincoln Fitzell.

LITERARY RESEARCH. Many books of importance to literary scholars appeared during 1938, but it is possible to name only a few of them here. Of new editions of classical English writers, the sixth volume of the critical edition of Ben Jonson, edited by the late Prof. C. H. Herford and Mr. and Mrs. Percy Simpson, calls perhaps for first mention; but there are also the three volumes of Dickens's letters collected by Mr. Walter Dexter—a work which adds enormously to the published corpus of Dickens's correspondence—and the concluding volume of the Shakespeare Head Brontë, edited by the late T. J Wise and Mr. J. A. Symington. In connexion with the Brontës may be mentioned, too, the partly unpublished *Gondal Poems* of Emily Brontë, which have been edited by Miss Helen Brown and Miss Joan Mott.

An important literary biography was Sir Herbert Grierson's life of Sir Walter Scott "supplementary to and corrective of Lockhart", which is the work of a distinguished student to whom a tributary volume of essays was dedicated by his fellow scholars earlier in the year. A bibliography of Scott's poems, by Mr. William Ruff, also appeared. There were several studies of Johnson and his circle, including a further volume of Mr A. L. Reade's *Johnsonian Gleanings* and a charming *opusculum* by Prof. F. A. Pottle of Yale, *Boswell and the Girl from Botany Bay*. Dr. L. F. Powell, in *The Times*, most interestingly brought to light another of those sermons which Johnson occasionally wrote for his clerical friends. Dr. Powell moreover read to the Bibliographical Society an important account of the topographical writings of Thomas Pennant. This Society also issued Mr. R. C. Bald's *Bibliographical Studies in the Beaumont and Fletcher Folio of* 1647. Further bibliographical work included Mr. Theodore Besterman's book on Cadell and Davies, the early nineteenth-century publishers; Miss Janet Doe's *Bibliography of the Works of Ambroise Paré*, the great sixteenth-century French surgeon; the seventh volume of the vast German catalogue of all *incunabula*; and the second volume of the *Census of Mediæval and Renaissance Manuscripts in the United States and Canada*, compiled by Mr. S. de Ricci, assisted by Mr. W. J. Wilson.

Finally, there was the discovery, announced by Mr. W. Force Stead in *The Times Literary Supplement*, of a manuscript, written by Christopher Smart during his madness, which contains some curious anticipations of his great poem *A Song to David*. (I. A. W.)



Lithuanian Legation, London]
VIEW OF KAUNAS FROM VYTAUTAS HILL, LITHUANIA

LITHUANIA. The suppression of the Nationalist party throughout Wilno preluded determined action by Poland upon her frontier claims there and in Suwalki. In the latter province agreement was amicably reached, but Lithuania only yielded in the former to a Polish ultimatum and outside counsels. By the settlement, diplomatic relations and communications were forthwith restored, regular railways services being inaugurated on July 1. The crisis led to the fall of the Cabinet, Dr. Tubelis being superseded on March 25 by Father Mironas, an army chaplain. Clashes with Nazis in Memel, accompanying the German coup in central Europe, led to a conference of the Lithuanian Ministers to the principal powers. Nazi prisoners were reinstated in civil rights, and acute feeling passed. But after the (expected) German majority in the Memel diet elections (Dec. 11), the cry for a "return to the Reich" was renewed, and Lithuanian emblems were banned in the autonomous territory. On Feb. 16 Lithuania had celebrated her twentieth birthday, granting amnesties to political prisoners. In November Dr. Antanas Smetona was re-elected for a third seven-year term as President, Memellanders abstaining. In December Dr. Karvelis, Christian Democrat leader, was arrested; M. Urbshis followed M. Lozoraitis as Foreign Minister. (H. Fw.)

Area and Population:
Area 34,516 sq. miles.
Population (est. Jan. 1, 1938) 2,579,668.
Chief Towns: Kaunas (130,000); Klaipeda (Memel) 38,927.

President. Antanas Smetona.

Language. Lithuanian (80 per cent).

Religion. Christian (Roman Catholic 80·5 per cent).

Production 1937:

Rye	606,942	metric tons
Wheat	220,693	,, ,,
Barley	273,987	,, ,,
Oats	387,767	,, ,,
Potatoes	2,509,925	,, ,,
Flax fibre	31,335	,, ,,

Overseas Trade 1937:

Imports, merchandise	212,667,200	litas
Exports, ,,	208,325,000	,,

Communications:

Roads (Jan. 1, 1938)	20,948	miles
Railways (,,)	1,114	,,

Finance and Banking :

Revenue, ordinary (1937)	. .	329,970,000 litas
Expenditure ,, (,,)	. .	318,153,000 ,,
Public Debt (Dec 31, 1937)	.	118,637,700 ,,
Notes in circulation (Sept. 30, 1938)	.	148,000,000 ,,
Gold Reserve (,,)	.	73,000,000 ,,

Exchange rate, Dec. 1938 (av) 28 litas = £1 stg.

Education 1937–38 :

Elementary schools, 2,601 ; scholars, 307,173
Secondary ,, 273 , ,, 31,647.

Defence Forces : In 1938 the Army consisted of 1,710 officers and 21,030 men, and the Air Force of 170 officers and 1,520 men.

Miscellaneous :

Motor vehicles licensed (Dec. 31, 1937) 2,676 cars, 1,169 cycles.
Wireless receiving set licences (Dec. 31, 1937) 75,737.

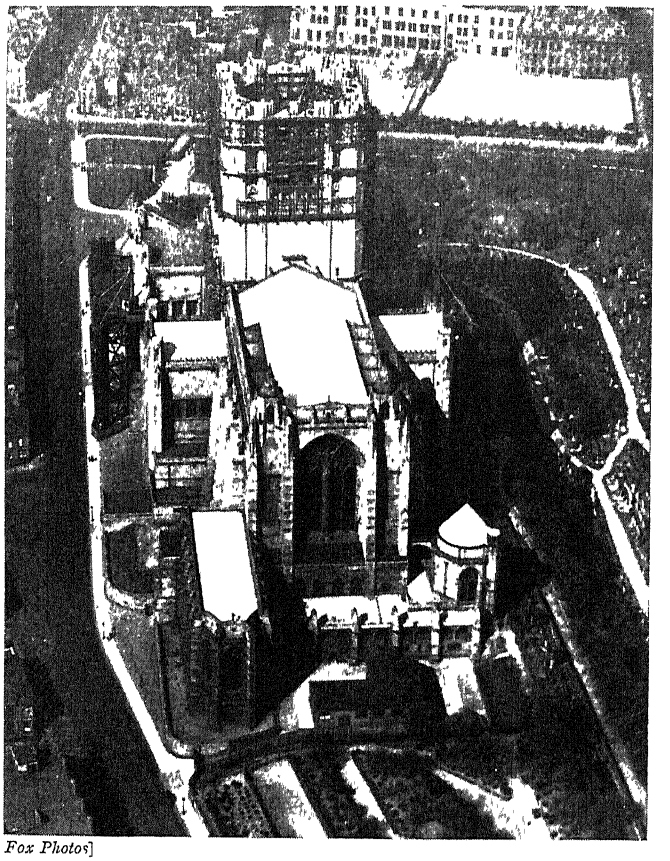
LITTLE ENTENTE. The year opened ominously with M. Goga's appointment in Rumania and M. Stoyadinović's rapprochement with the " axis " powers, but King Carol proved friendly to the Little Entente The Council, meeting at Sinaia on May 4–9, affirmed the signatories' loyalty to the League, and agreed to continue the negotiations with Hungary. These proceeded privately, until at Bled (Aug. 21–22) it was announced that a pact had been initialled with Hungary similar to the Salonica Agreement between the Balkan Entente and Bulgaria (*q.v*), comprising recognition by the Little Entente of Hungary's right to rearm, and mutual renunciation of force. The pact was to be signed when an agreement had been reached on the subject of minorities. Hungarian spokesmen indicated that they had reached agreement with Yugoslavia (who, in fact, made certain concessions to her Magyar minority) and Rumania (who had issued a Minorities Statute on Aug. 4), but not with Czechoslovakia, from whom they demanded more. In the subsequent Czechoslovak crisis Hungary did not allow the *casus fœderis* of the Little Entente to arise. It seemed likely thereafter that the changed situation of Czechoslovakia would lead to a complete revision of the Little Entente system, but the situation was still obscure at the end of the year

The Economic Council met at Bucharest (March) and Split (September). (C. A. M)

LIVERPOOL. The fourth largest city of Great Britain and her principal Atlantic port lies on a site of 27,321 acres on the right bank of the river Mersey, and has an estimated population of 864,000 (1931 census, 855,688) , its rateable value is approximately £6,769,200. In the last year for which figures are available, the port's trade was valued at : exports (British products only), £130 millions ; imports, £159 millions ; tonnage entering the port created the record of 22,097,755, an increase of 698,256 on the previous year—itself a record.

Under the guidance of the corporation, ably seconded by the Merseyside Co-ordination Committee, industrial development of the whole of the area is proceeding at a rapid, though well-planned, pace ; efforts to attract new industries are meeting with success, and the great Clarence Dock Power Station, one of the most economically constructed and maintained generating stations in the country, and the Speke Airport, the largest civil aerodrome in the United Kingdom (418 acres), and the only airport fully equipped for night flying in accordance with official specification, are among the evidences of civic vitality.

Much progress has been made on the Corporation's new industrial estate at Speke, to the south-east, where over 1,000 houses are now occupied. Factories are turning out furniture, chemicals, metal alloys, etc. ; and adjoining the airport is the large " shadow " aeroplane factory erected by the



Fox Photos]
THE ANGLICAN CATHEDRAL, LIVERPOOL, TO BE COMPLETED IN 1950

government. When completed in about 1941, Speke will be a self-contained and self-sufficing unit of 2,216 acres with a population of 25,000 In the north is another corporation housing and factory estate, East Lancashire Road, of some 300 acres.

Their Majesties visited the city in May, during their tour of Lancashire, and were much interested in Speke ; they witnessed a physical training display by 1,000 elementary school children, and, on the Everton football ground, presented new colours to Liverpool's leading Territorial units, the 5th Battalion The King's Regiment, and the Liverpool Scottish (Queen's Own Cameron Highlanders). In the same month Lord Baldwin opened the Harold Cohen Library of the University ; built to the designs of Mr. Harold A. Dod at a cost of approximately £95,000, its book-stacks will accommodate one million volumes and its reading-room 120 students.

The municipal elections in November resulted in a Conservative gain of seven seats, giving the Conservatives a majority of 35 over all other parties.

LIVESTOCK : *see* CATTLE AND SHEEP.

LLOYD'S : *see* MARINE INSURANCE.

LOCAL GOVERNMENT. The reorganization of local government areas in England and Wales that was begun in 1932 is continuing on a diminishing scale, and during 1938 six urban districts received charters of incorporation as municipal boroughs, namely, Slough, Chingford, Erith, and Dagenham in the Greater London area, and Kettering (Northants) and Tipton (Staffs). There are now 305 municipal boroughs in England and Wales ; county boroughs have remained stationary at 83 for many years, with four districts in Scotland (Edinburgh, Glasgow, Dundee, and Aberdeen), and one in Northern Ireland (Belfast) having equivalent status.

The chief event of the municipal year was the elections throughout the cities and boroughs, the Metropolitan boroughs excepted. Labour had to confront what was described in some quarters as a "country-wide fight against socialism", and the results showed a net Labour loss of 17, as is apparent from the following table

	Candidates	Successful	Unsuccessful	Gains	Losses	Balance
Conservatives .	647	406	241	57	37	+ 20
Liberal . .	140	85	55	14	16	− 2
Labour .	1,112	407	705	62	79	− 17
Fascist . .	15	0	15	—	—	—
Non-Political .	582	287	295	40	41	− 1

The table below gives a summary of Labour's gains and losses over the nine years 1929–37; the net result, including the 1938 elections, being a gain of 480 seats (* indicates a year in which the Metropolitan boroughs also polled):

1929 . + 126	1932 . + 12	1935 . − 25
1930 . − 76	1933 . + 205	1936 . − 82
*1931 . − 420	*1934 . + 698	*1937 . + 50

The 1938 elections, despite the interest added by questions relating to A.R.P. and the widespread rise in rates, aroused little enthusiasm, and were fought much more on local as opposed to national politics than has frequently been the case.

Among recent Acts of Parliament specially affecting local authorities are the Coal Act, the Act relating to Food and Drugs (*q v*), the Fire Brigades Act, and the Poor Law Amendment Act, 1938. A Local Authorities (Enabling) Bill was introduced in February extending the trading powers of local authorities, especially in regard to milk, coal, bread, and bricks, and, in the case of county boroughs with over 150,000 population, giving the right to carry on savings banks, with other powers; but it shared the fate of a similar bill of 1930 in being rejected on second reading.

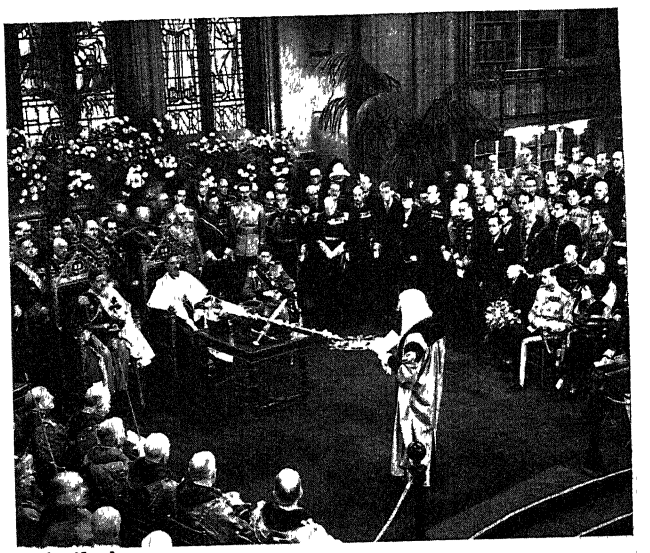
The Local Government Superannuation Act, 1937, does not come into force until April, 1939; it is, therefore, too early to say anything about its working, a remark that also applies, though in a less degree, to the dispute (see *Ency. Brit. Book of the Year*, 1938, p. 385) between the local authorities and the Home Office relative to the allocation of costs in connexion with A.R.P. The crisis of Sept. 1938, besides shedding further light on the matter, raised a host of new questions, and showed that existing estimates of both expense and necessary personnel were far below the mark; but, in spite of the appointment on Nov. 2 of a Minister of Civilian Defence directly responsible for A R.P., the position was by no means clear at the end of the year.

The expense of local government continues to rise, and in October the chairman of the National Union of Ratepayers' Associations estimated the dead-weight debt of local authorities, apart from trading undertakings, at £1,000 millions. In 1931 when bankruptcy was thought to be in sight, the average rate per head throughout England and Wales was £3 15*s.* 4*d.*; in 1938 it had risen to £4 6*s.* 3*d.* The average rate in the pound levied for the year 1938–39, with (in brackets) the comparable figure for 1937–38, is: county boroughs, 13*s.* 11¼*d.* (13*s.* 5½*d.*); boroughs, 12*s.* 10½*d.* (12*s.* 3¼*d.*); urban districts, 14*s.* 7*d.* (13*s.* 11⅜*d.*); and Metropolitan boroughs, 13*s.* (12*s.* 0⅛*d.*). (L. H. D.)

LOCKOUTS: *see* STRIKES AND LOCKOUTS.

LONDON. Neither the London County Council nor the Borough Councils held general elections in 1938: three by-elections for the L C.C took place—at West Lewisham, Central Hackney, and Clapham, the representation remaining unchanged in the former two, while the Labour Party gained the third seat from the Municipal Reformers. Lord Snell, after holding the chairmanship of the Council for three years, did not stand for re-election, and was succeeded by Mr. E. G. Culpin, an architect, and Labour representative for N Battersea. At the elections for the Greater London borough councils in November, two newly-created boroughs, Erith and Dagenham, fell to the Labour Party, while the third, Chingford, which had previously had a Labour Urban District Council, was won by the anti-Labour forces

London's outward aspect continues to change rapidly. The new Adelphi building, overlooking the river and consisting mainly of offices, was formally opened at the end of October. In Mayfair, reconstruction in the Savile Row area proceeds apace; Savile Place has disappeared, to give way to an extension of Savile Row, enabling traffic to enter Conduit Street from the south, and a connexion between Vigo Street and Maddox Street will afford a new route from Bond Street to Regent Street. Government offices have invaded Mayfair: the Forestry Commission is now established in Savile Row, and the Air Ministry has occupied Berkeley Square House, a vast new block on the east side of the Square. The extension of Curzon Street into Park Lane was opened in the summer. Grotrian Hall, and several adjoining houses in Wigmore Street, have disappeared for an extension of the Selfridge store. The Imperial Airways headquarters, adjoining Victoria Station, with its 175 ft. tower, is almost complete; the new Westminster Hospital buildings in St. John's Gardens are to open in March 1939, and the extension of the County Hall at Westminster Bridge is also to be ready in the New Year. In connexion with the last, proposals have been put forward by the L.C.C. for the continuation of the South Side embankment to a point fifty yards below Waterloo Bridge, the construction of a riverside open space, and the widening and re-alignment of the existing roadways behind the County Hall. The site of the Shakespeare National Theatre, in Cromwell Gardens, has been cleared, and it is hoped that



Evening News]

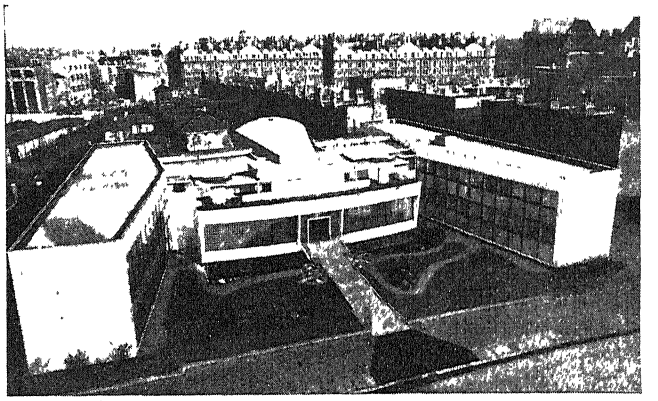
THE CITY RECORDER READING AN ADDRESS OF WELCOME TO KING CAROL AT THE GUILDHALL, LONDON, NOV. 16, 1938. THE LORD MAYOR IS SEATED BETWEEN THE KING AND THE PRINCE MICHAEL

building will shortly begin. Work has not yet begun on the King George V Memorial at Abingdon Street, Westminster, but a final decision has been arrived at to proceed with the smaller of the two alternative schemes, which will necessitate a minimum destruction of existing buildings. The renovation of the Tudor houses at Staple Inn, Holborn, is complete; in Whitehall, Whitehall Gardens, dating in part from the seventeenth century, have disappeared to make room for government offices, and, for the first time since it was erected in 1760, the Adam stone screen in front of the Admiralty has been cleaned; in St. James's Square, Norfolk House (built 1742–56) has been demolished, and the destruction of Adam houses has been continued in Howland Street, Tottenham Court Road, where a telephone exchange has replaced them; the last Nash fragment in Lower Regent Street has also been demolished; and the Warner Cinema in Leicester Square, replacing Daly's Theatre, opened its doors in October. Changes farther afield include the new wing of Queen Mary College, Mile End, erected at a cost of £57,000 for the University of London and opened in October, and the new Seamen's Hospital, which cost £85,000, much of which sum was provided by Lord Nuffield, in replacement of the old Albert Dock Hospital.

May saw the publication of the long-awaited report of the Highway Development Survey begun in 1934 by Sir Charles Bressey, with Sir Edwin Lutyens as consultant. The report recommends a far-reaching scheme of road reconstruction in the London area, planned to cover thirty years: the proposals include plans for new connexions between the centre and the surrounding arterial roads; the linking-up across London of the radial roads, such as Eastern and Western Avenues, which do not enter the centre; the provision at certain places of viaducts or subterranean traffic routes; new "roundabout" planning at congested junctions, and other like schemes. Among specific road proposals are the connexion of Harrow Road and Western Avenue with Eastern Avenue by way of Euston Road, a loopway north of the City, and a new connexion between Holborn and Shoreditch; an Old Street by-pass; a complete replanning of the Horseferry Road area; a Mayfair–Soho road south of Oxford Street, and a subterranean road beneath Kensington Gardens; a viaduct over the railway from the City to Camberwell; new lay-outs of Hyde Park Corner, Oxford Circus, the London Bridge Station area, and numerous other junctions; the doubling of Rotherhithe Tunnel, and the construction of a cross-river vehicular tunnel at Woolwich.

During the year over 600 street names were changed, in order to obviate the frequent recurrence of the same street name in different districts.

None of the new tube extensions has as yet been opened, but the reconstructed stations at Moorgate, Aldgate East, and St. Paul's have been brought into use. A new surface electric railway from Motspur Park to Tolworth was opened in May, and is shortly to be extended to Chessington. As from the beginning of 1939, compulsory queueing for buses has been introduced at busy points. The conversion of tramway routes to trolleybus operation proceeds rapidly, and by the end of 1938 almost the whole of the tramway system north of the Thames had been or was being dismantled. London Transport's fine safety record was marred by a collision on the District Railway at Charing Cross in May, resulting in six deaths, while its financial position was adversely affected by rising costs, the dividend paid on the "C" stock falling to four per cent from the four and a quarter per cent paid the preceding year, thus



Architectural Review]

THE FINSBURY HEALTH CENTRE. ARCHITECT: TECTON

entitling the stockholders to petition for the appointment of a receiver—a right they have not so far exercised. In November the Standing Joint Committee of the L.P.T.B. and the main-line railway companies announced that steps would be taken to provide for an increase in certain fares throughout the London Passenger Transport area, which extends some thirty miles from the centre and covers about 2,000 square miles. In connexion with London's transport, the City Corporation in the spring obtained the formal consent of the Air Ministry to its formation of an airport at Fairlop, near Ilford. The site, purchased for £290,000, covers nearly 1,000 acres and work is in progress on the scheme, towards the capital purposes of which the Common Council has voted a further £600,000.

Various purchases of land in furtherance of the Green Belt scheme have been made or arranged for in 1938. The L.C.C. has provided a new athletic ground, with milk bar, at Parliament Hill Fields, where a "lido" has also been opened; other "lidos" are being constructed at Battersea, Charlton, and Clissold Parks, in addition to those already existing at Victoria and Brockwell Parks and in certain of the royal parks.

The Metropolitan Water Board's new laboratories at New River Head were opened in October. A 350-acre reservoir, three miles in circumference, is under construction at Staines, to hold 4,400 million gallons; another of similar size is to be built at Walton-on-Thames. As a result of the 1937 typhoid epidemic at Croydon, the Board is seeking parliamentary authority to take over the water supply in that area.

The Port of London Authority has taken in hand the reconstruction of the Royal Victoria Dock, at a cost of £750,000. An inquiry planned for March into the projected scheme for a Thames Barrage below the Tower Bridge was abandoned, chiefly as a result of the opposition of the Committee of Imperial Defence.

Slum clearance and rehousing is still a major preoccupation of the L.C.C. Work began during 1938 on the development of a large housing site at Stoke Newington; and a further planning scheme at Bethnal Green contemplates the reconstruction of about 130 acres of slum streets. A report made to the Council in April stated that over £57 millions had so far been spent on slum clearance and rehousing, 86,600 houses and flats to house 385,000 persons having been erected, while a further 19,000 flats were in contemplation. In addition, the City Corporation and the Borough Councils have provided some 25,000 dwellings since the World War.

The growing importance of London as an industrial centre was brought out by the report of the Royal Com-

mission on the Geographical Distribution of the Industrial Population, which showed that 3,453,010 insured persons, or 26 per cent of the country's industrial population, resided in London and the Home Counties—an increase of 1,032,500, or 42·7 per cent since 1923. The number of employers of insured workers in London is 157,067, or 27·8 per cent of the British total.

The County rate for 1938–39 was raised by 6*d.* in the pound to 7*s.* 9½*d.*, this figure included 2*s.* 6·9*d.* for education and 1*s.* 10·7*d.* for public assistance. The gross total expenditure on rate account for the year was estimated at £35,251,171, of which £23,786,500 was to be provided from rates. The rateable value of the County in April 1938 was given as £61,582,278, including about £8,329,400 for the City area, an increase on the figure for the previous April of £933,650. The decision was made in July to seek power from parliament for the rating of site values.

The international crisis of September afforded a very practical test of London's readiness to meet the danger of air bombardment and gas attack. Respirators were issued by the borough councils to almost the whole population; trenches were rapidly dug in parks and squares as protection against shrapnel; many public buildings, hospitals, blocks of flats, etc. were "sand-bagged"; and plans were in readiness for the immediate evacuation of London's half-million school children: 3,000 physically defective children were actually evacuated. A trial of the balloon barrage, now including 600 balloons, took place on Oct. 8, on Nov. 19 a "full-dress" rehearsal of an attack by fifty bombers on the City was held, and on Dec. 8 a large-scale test of London's air-raid warning signals was made, about 100 sirens installed at police stations in widely scattered districts being "tried out". The Metropolitan Fire Brigade appealed for 30,000 auxiliary firemen and 5,000 ambulance drivers, and was in readiness to absorb into its existing organization all the volunteers who came forward.

LONDON UNIVERSITY. The Farnham House Laboratory (Imperial Institute of Entomology) and the College of Estate Management have been brought into connexion with the University, the number of Schools and Institutions now being sixty-two. A second Observatory, housing a 24-in. telescope presented by the Radcliffe Trustees, was opened on July 1, 1938. Mr. C. C. L. Gregory has been placed in charge of the Observatories. New Chairs include that in the History of the Technology of Art (D. V. Thompson, Courtauld Institute of Art), and that in Polish Literature and History (W. J. Rose, School of Slavonic and East European Studies). The Chair of Radiology has been temporarily discontinued.

There were over 500 more internal students than in the previous year, and again the increases were in medicine and engineering, with a slight drop in other faculties. The number of advanced students from 98 other universities registered in the year was 386, in addition to London graduates. 6,502 students entered for external examinations, 2,499 from provincial institutions. The total number of registered external students was 10,570, a slight drop on the figure for 1937.

A new research fund to assist individual projects of research in all faculties was instituted, and grants of about £4,000 were made. In addition, 22 applicants received grants from the fund for the publication of research. As to the Victoria County History, the Index for Huntingdon has been completed, and with it the whole County. Vol. I., Cambridgeshire and the Isle of Ely, has now been finished. One hundred and two special public lectures were given, 25 lecturers coming from abroad.

Important decisions have been reached with regard to the new buildings, especially those to proceed with the Institute of Historical Research and with the new Students' Union, the latter made possible by the generosity of Lord Nuffield, the University Grants Committee, and the National Fitness Council. (S. J. W.)

LOS ANGELES, county seat of Los Angeles county, California, has an area of 442 sq. miles; its present population is approximately 1,500,000. Mayor Frank L. Shaw was decisively defeated at a recall election on Sept. 16 by Judge Fletcher D. Bowron, on a platform pledging clean city government and unceasing warfare on vice and corruption. Mayor Bowron immediately began his "purge" by calling for resignations from scores of city commissioners. Several former officials have since been indicted by the grand jury and hundreds of persons have been arrested in raids against vice and gambling.

Building operations for the year are estimated at approximately $70 millions. The new Union railway station and the Federal building will be completed about the middle of 1939. Other items include the new armoury in Chavez ravine and extensive flood control work along the Los Angeles river, a Federal project. The new mile-square airport for the city near Inglewood, costing $8,250,000, will be completed July 1939. Other airports, at Glendale and Burbank, will be overshadowed by this modernized municipal airport.

Events of significance to Los Angeles include the completion of a project for the electrification of a 600-mile area in Imperial valley, and of Imperial Dam, at the head of the new All-American canal; and the piercing of the San Jacinto tunnel, clearing the 250-mile waterway for the giant Colorado river aqueduct, after nearly six years of hard rock drilling for thirteen miles through solid mountain.

LUCAS, EDWARD VERRALL, British essayist, was born in 1868, and died in London on June 26, 1938. A short account of his work may be found in the *Ency. Brit.*, vol. 14, p. 456. He was for long associated with the publishing firm of Methuen, and ultimately became its chairman. He was also a member since 1928 of the Royal Commission on Historical Monuments, and since 1933 of the Crown Lands Advisory Committee. His later publications included *Reading, Writing, and Remembering*, 1932; *Postbag Diversions*, 1933; *The Old Contemporaries*, 1935; *Only the Other Day*, 1936; *London Afresh* and *All of a Piece*, 1937. In 1935, he edited the first complete edition of the *Letters of Charles and Mary Lamb*. Lucas was created a Companion of Honour in 1932.

LUGONES, LEOPOLDO, Argentine poet, was born on June 13, 1874, and committed suicide near Buenos Aires on Feb. 19, 1938. His poetry ranks among the best that has been written in the Spanish language, and the best known of his publications are: *Las Montañas de Oro*, 1897; *Los Crepúsculos del Jardin*, 1905; *Lunario Sentimental*, 1909, and *Odas Seculares*, 1911.

LUTHERANS. During 1938 the Lutheran Church everywhere faced the challenges of changing conditions with increasing gravity. The situation in Germany especially, made it impossible to escape the serious consideration of the old, unsolved problem of the relationship between the church and the state. The practical interests involved led to the re-study of fundamental principles, not for one country only, but for the whole world. These changing

conditions, challenging all of the claims of the Christian religion, influenced the executive committee of the Lutheran World Convention in the formulation of the programme for its 1940 meeting in Philadelphia, Pa. That programme is focusing discussion upon three fundamental subjects: the Word and Sacraments, the Lutheran Church and other churches; and the Church in the world. Commissions have been appointed, with members from Europe and America, to prepare studies on these subjects for consideration by the Convention when it assembles in 1940. The scope and nature of these studies are of significance to all of the œcumenical movements, working now for the union of all Christians The commission on the Church in the world is making a Lutheran study of the main topics discussed in the World Conference on Life and Work at Oxford in 1937, and the other commissions are studying the subjects which were prominent in the World Conference on Faith and Order at Edinburgh in 1937.

Recent statistics give the number of Lutherans as a little over 63 millions. They are found in all parts of the world, distributed approximately as follows: Africa, 377,000; Asia, 633,000; Europe, 56,662,000; North America, 4,983,000; Oceania 349,000; South America, 305,000,

LUTYENS, SIR EDWIN LANDSEER, K.C.I.E., P R.A. (1869–), British architect (of whom an account will be found in the *Ency Brit.*, vol. 14, p. 501), was elected to the presidency of the Royal Academy in Dec. 1938, on the resignation of Sir William Llewellyn; he is only the second architect to be elected, the first being Sir Aston Webb (1919–24), though James Wyatt held the office temporarily for a few months in 1805.

Sir Edwin, who resigned his twenty-four years' Fellowship of the Royal Institute of British Architects in 1930 owing to criticism of his Charing Cross replanning scheme, is, perhaps, most widely known as the designer of the Cenotaph in Whitehall, London; but his work, always highly individual though based on traditional design and the best craftsmanship, is very varied, ranging from the Communion plate of St. Paul's, furniture and fittings for private houses of his own design, the Queen's Dolls' House, and Hampton Court bridge, to the Australian War Memorial at Villers Bretonneux, the Roman Catholic Cathedral at Liverpool, and the headquarters of the Midland Bank, London. He is now designing the Jellicoe and Beatty fountains for Trafalgar Square, and, in collaboration with Mr. Cecil Masey, the National Theatre, South Kensington.

Sir Edwin was knighted in 1918, and received the K.C.I.E. in 1930; in 1897 he married the second daughter of the first Earl Lytton, and has one son and four daughters.

LUXEMBURG. An independent European State, south-east of Belgium, with which country an economic union was formed in 1922 and the Customs frontier abolished.

Area and Population:
Area 1,000 sq. miles.
Population (est. Dec. 31, 1936) 298,000.
Chief Town, Luxemburg (capital, pop. 57,740).
Ruler. Grand-Duchess Charlotte.
Language. German.
Religion. Christian (mainly Roman Catholic).
Production 1937:

	metric tons		metric tons
Wheat	32,800	Iron Ore	2,350,000
Rye	10,000	Pig Iron	2,513,000
Potatoes	205,300	Steel	2,511,000

Railways 1938: 328 miles open to traffic.

Finance:
Revenue (1937) 356,500,000 frs (loans 67,200,000 frs)
Expenditure (,,) 330,900,000 frs.
Public Debt (Dec. 31, 1936) 655,100,000 ,,

LYNCHINGS. Following passage by the United States House of Representatives, in April 1937, of the Gavagan Anti-Lynching Bill, H.R. 1507, the companion bill introduced in the Senate by Senators Robert F. Wagner (New York) and Frederick Van Nuys (Indiana) was filibustered against until it was finally displaced from the Senate calendar by an emergency relief bill. The filibuster was characterized by great bitterness on the part of some of the members of the small minority of the Senate which bitterly fought to prevent a vote on the measure. Seventy-three of the 96 senators were pledged to vote for the bill but were not permitted the democratic right to do so The filibuster lasted more than six weeks (Jan. 6–Feb 21, 1938), the cost of it to the American taxpayer being estimated at $460,000.

Of significance was the complete cessation of lynching while the bill was pending before the Congress. But with the adjournment of Congress lynching mobs renewed their activity. Seven lynchings occurred during the last half of 1938. More than 1,000 persons participated in the lynchings. But despite the frequent assurance by Southern senators and by Southern governors that Federal legislation against the crime was unnecessary because the States could and would prevent lynching, not one of the more than 1,000 lynchers was arrested. An anti-lynching bill was introduced in the Mississippi State Legislature during the course of the debate in Congress. But when it was seen that the filibuster in Congress would succeed, further efforts to secure passage by the Mississippi Legislature of the State bill was dropped. U.S. Senate and House proponents of the legislation announced as 1938 drew to a close that the bills would be reintroduced in the 76th Congress.

LYONS, RT. HON. JOSEPH ALOYSIUS, C H. (1879–), Australian statesman (see *Ency. Brit. Book of the Year*, 1938, p. 389), leader of the United Australia Party, and prime minister of the Commonwealth since 1931; he became a Privy Councillor in 1932, and in 1936 was made a Companion of Honour.

At the sesquicentennial celebrations held at Sydney at the end of January, 1938, in thanking the countries that were represented Mr. Lyons stressed the point that Australia's proudest boast was that she had always had peace within her borders. On March 7 he announced his new policy of assisting immigrants from the United Kingdom, and on the 24th a three-year defence programme. The latter authorized an additional expenditure of £24,800,000, recent events having indicated the need for increased preparedness. This, he explained later (March 25), would not entail a large addition to taxation, and would be devoted to armaments and equipment rather than to manpower.

In October Mr. Lyons had to meet a motion of censure, inspired chiefly by the failure of the Premiers' Conference and the alleged state of unpreparedness for defence; and on the 27th he warmly welcomed His Majesty's decision to send the Duke of Kent to succeed Lord Gowrie as Governor-General in 1939. In November the prime minister agreed to the suggestion of Mr. Scullin, leader of the opposition, that a special session of parliament should be held early in 1939 to consider amendment of the Constitution in the direction of a more unified system of government.

Mr. Lyons is married, and has five sons and six daughters.

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MACHINERY AND MACHINE TOOLS. In most countries, the year 1938 saw a slight easing in the abnormal demands of the previous year on the engineering industry, so that manufacturers found the pendulum swinging back generally towards more normal outputs. Large numbers of machines, in many instances ordered several months previously, were, however, still far from completion, and this, coupled with an accumulation of export orders, meant that once more developments in design had to take second place to production

As a result, no changes of any great importance were made, although progress in many directions resulted in products of greater utility, productive capacity, and accuracy.

Probably the greatest activity has taken place in the heavy machine tool field, where considerations of idle time and the handling of very large components are factors of considerable importance. Usually the setting-up time on such work is very much longer than the actual time for the machining operations carried out, and the change over from one machine to another for subsequent operations involves the continual use of expensive lifting facilities, which results in high handling costs as well as long periods of idle time on several machines.

To obviate this, machines have been designed capable of performing a number of multiple operations on the work at one setting, so being much more adaptable to the machine tool user. Thus we have boring mills capable of milling, turning, grinding, and honing, also slotting machines with detachable milling heads, to mention but two examples of development in this direction.

Another development to facilitate the machining of very large work was the wider application of the heavier types of portable machine tools capable of being moved with little effort to carry out supplementary operations, and thus obviating the necessity for moving the work to the machine.

For dealing with the smaller classes of work, however, where handling presents no difficulties, the tendency in design has been to simplify the individual operations by spreading the total amount of work to be performed on any given component over a number of different machines.

Electrical control of machine tools has also made important strides forward, particularly on the larger machines where, as previously mentioned, it is very necessary to reduce idle time to the minimum. One great advantage is the availability of remote control provided by this method, which enables the operator to control the machine from the most convenient position.

In certain directions, electro-hydraulic control is finding considerable favour, and, where applied to milling machine design, has achieved some remarkable results.

The increased use and development of the new metals also made it essential to design machines with much wider speed ranges, so that they were just as capable of cutting the harder materials at slow speeds as of running at the extremely high speeds and fine feeds necessary for machining the lighter alloys.

The new trend of fitting individual lights on machine tools has aided the operator considerably by lessening fatigue and eye strain, with a consequent increase in his productive capabilities. Better guarding and covering in of moving or dangerous parts have also added their quota to the progress of the year

Turning more to developments in individual types of machines, we find that the grinding machine received a lot of attention and improvements have been so successful that the limitations would now seem to be in the grinding wheel rather than in the machine itself.

In this direction automatic sizing devices were considerably perfected, and as such have been much more widely adopted. This introduces the subject of accuracy which, during 1938, reached a degree hitherto unheard of, particularly as applied to centreless grinding, where results have been attained which could not be accomplished by any other method.

The use of the abrasive cutting-off machine was also extended to deal with the lighter alloys and even manganese steel rail sections.

Surface broaching is being employed to an increasing extent on a variety of parts formerly dealt with on the milling machine Machines of both push and draw types have been developed and very high production rates can be maintained, especially when used in conjunction with multi-station or indexing work holding fixtures to reduce idle time. Where the amount of material to be removed is not excessive, a single traverse of the broach is sufficient, producing a high finish to a fine degree of accuracy.

In this connexion we have the all-hydraulic broaching machine, the combined hydraulic and mechanical, and the purely mechanical machine, each of which has its respective merits.

It is interesting to note that uprights on planing machines and vertical boring mills have developed into a rectangular form as against the previous curved type, thus enabling bridge pieces of very much larger section to be used with a consequent stiffening of the resistance to cutting strains.

A development in lathe design has been the introduction of the multi gearbox, which enables any particular thread to be cut without the necessity for separate change gears. Also of interest is the separately driven tailstock live spindle on many lathes to replace the less efficient revolving centre for heavy cutting.

Another rather interesting development during the year was the extension of the scope of woodworking machines for the purpose of metal-removing operations on light alloy plates, bakelite, and fibre, thus taking further advantage of the very high speeds for which these machines are designed. Mention might be made of a small high-speed circular saw successfully adapted for splitting axially long aeroplane metal spars of 1½ in. by 1 in. hollow section. Previous attempts to carry this out by other processes resulted in the collapsing of the work owing to its extremely light section.

Turning from the cutting operations to die casting, we find that 1938 saw the process adopted for a much wider range of articles for general use, whilst on the drop stamp-

ing machine soft cast metal dies provided a considerably cheaper method of producing small quantities of component parts than by dies cut on a die-sinking machine.

Other features of development worthy of note in machines generally were the improvements made in the oiling arrangements, removal of swarf, easier controls, and a wider application of ball and roller bearings. (W. J T.)

MACPHAIL, SIR ANDREW, Canadian pathologist and historian, was born in Prince Edward Island on Nov. 24, 1864, and died at Montreal on Sept. 23, 1938. After graduating at McGill University, he studied medicine there and at the London Hospital. From 1895 to 1906 he was pathologist to the Western Hospital and the Protestant Hospital for the Insane, Montreal; and from 1906 to 1937 was professor of the History of Medicine in McGill University. In 1917 he delivered the Cavendish Lecture. He was knighted in 1918, and was made O.B.E in 1919. Macphail's publications included *Essays in Puritanism,* 1905; *The Vine of Sibmah,* 1906; *Essays in Fallacy,* 1910; *In Flanders Fields,* 1918 (a biography of Colonel John McCrae); vol. I of the *Official History of the Canadian Forces in the European War,* covering the Medical Services, 1925; *Three Persons,* 1929 (*i.e.* Sir Henry Wilson, Colonel House, and Colonel Lawrence); and *The Bible in Scotland,* 1931.

MADAGASCAR. The economic prosperity of Madagascar was such that foreign trade in 1937 reached 379,000 tons, approaching the 1924 record. During the first eight months of 1938 it was 51,000 tons over the corresponding period of 1937. The 1937 budget showed 14 million francs surplus, and prospects were equally bright for that of 1938.

The ashes of the former queen of the Hovas, Ranavalona, who died in exile, were transferred in October to the tomb of the Queens at Antananarivo amid impressive manifestations.

A meeting of 150,000 Malagasies on May 28 in the plain of Mahasima hailed the decree of April 7, by which the conditions of admission to French citizenship were extended. Two further decrees improved labour conditions and the position of newspapers in the Malagasy language.

Since June 1937 Madagascar has been within six days by aeroplane of Paris. (C. A. J.)

Area and Population:
Area (including Comores Is., Providence Is., etc.) 236,900 sq. miles.
Population, total (est. Dec. 31, 1936) 3,800,000 (Europeans 39,713).
Chief Towns: Antananarivo (cap. 103,500), Tamatave (24,000).
Governor-General. M. Henry.
Production 1937:

Maize	80,000 metric tons
Rice	644,000 ,, ,,
Potatoes	36,000 ,, ,,
Coffee	30,000 ,, ,,
Ground nuts	8,200 ,, ,,
Cane Sugar	12,800 ,, ,,
Tobacco	6,300 ,, ,,
Phosphates	4,000 ,, ,,
Gold	419 kilogrammes

Overseas Trade 1936:

Imports	306,082,000 francs
Exports	436,200,000 ,,

Communications 1937:

Roads, main 1,550 miles; total	16,150 miles
Railways, open for traffic	530 ,,

Finance 1938:

Revenue, local (est.)	297,690,000 francs
Expenditure, ordinary (est.)	297,690,000 ,,

MADEIRA. A group of islands some 520 miles west of Lisbon, Madeira is an administrative area of Portugal (*q.v.*). It consists of the islands of Madeira and Porto Santo and three uninhabited islands. Madeira is a recognized tourist resort and its prosperity is largely dependent on tourist traffic.

Area and Population:
Area 314 sq. miles.
Population (1931) 211,601.
Chief Town: Funchal, Madeira (cap.) pop. 31,352.
President. Gen Antonio Carmona.
Language. Portuguese.
Chief Products. Wine, bananas, cane sugar

MADRAS, the capital of the Indian province of that name, was the earliest important settlement of the original East India Company. Pop. 647,230. The municipal corporation, strongly nationalist in its politics, has embarked on an extensive policy of housing, road-making, and slum-clearance, as well as of dealing with lepers and beggars. During 1938 it raised a loan of 12 lakhs (£90,000) for these purposes. The harbour, only 200 acres in area and wholly artificial, continues to be steadily improved.

MADRAS PRESIDENCY, officially the Presidency of Fort St. George, is the senior province of India. Its Governor, since Nov. 1934, is Lord Erskine. The new constitution is probably working more successfully here than in any other province. The ministry is under Congress influence; but the prime minister, Mr. C. Rajagopalachariar, follows Mr. Gandhi rather than the extreme left-wing of the Congress, and has handled the administration with caution and moderation. It is startling, however, to find that the Speaker of the Assembly takes an active part in Congress work outside. The Justice party, which was started as a non-brahman movement for rights, has suffered from internal dissension, and brahman ascendancy is returning. Yet a generous policy towards the non-caste Hindus, or "untouchables", is being steadily pursued. The former government of Madras had spent £750,000 in the last ten years on their betterment, in housing, education, water-supplies, etc. This work continues, especially in the field of education; and the new government took a bold step in the Malabar Temple Entry measure, conceding a privilege to the lower castes which orthodox brahmans have bitterly resisted. The Prohibition experiment, which was started in 1937 in the Salem district, has been favourably reported on and is now being extended to two other districts. An active programme of social service is being worked; but in spite of the financial burdens involved, the provincial budget for 1938–39 was framed with such skill as to avoid new taxation. An Agriculturists' Relief Act was passed in 1938, though doubts are generally entertained as to its economic wisdom. (ME.)

Area and Population:
Area 124,363 sq. miles.
Population (1931) 47,193,602.
Governor. The Lord Erskine, G.C.I.E.
Languages. Tamil, Telugu.
Religion. Hindu.
Production 1936:
Area under cotton, 2,372,725 acres (estimate).
Factories, 1,584; No. of workers employed (average), 170,800.
Seaborne Trade (1936–37) Rs. 82,57,56,596.
Finance:

Revenue (est. 1937–38)	Rs. 15,93,73,000
Expenditure ,, ,,	Rs. 15,93,67,000

Education 1936. 48,300 institutions; 3,181,900 scholars.
Motor vehicles licensed (March 31, 1937): cars and taxis, 14,768; commercial vehicles, 4,993; motor-cycles, 1,352.

MADRAS STATES. The most important of these are

Travancore and Cochin, lying along the south-west coast. (Resident, Mr C. P. Skrine, at Trivandrum.) Their total area is over 10,000 sq. miles and their population nearly seven millions. Cochin (ruler, Maharaja Sir Ram Varma, with a seventeen-gun salute) distinguished itself by promulgating reforms in June 1938 which established, for the first time in an Indian State, the principle of ministerial responsibility to a legislative with a majority of popularly elected members. Travancore (ruler, Maharaja Sir R. V. Ramaraja, with a nineteen-gun salute) took measures against the setting up of a Congress organization in the State which resulted in some rioting and loss of life. The Neyyoor hospital celebrated, in March 1938, the centenary of what is believed to be the largest medical mission in the world. About a fourth of the population of the Travancore State are Christians, including a large community of the Jacobite Syrian church. (ME).

MADRID. There was little change in the military situation in the city and its neighbourhood during 1938. Of the seven main roads running into the city, six were in insurgent hands; bombing raids from the air occurred at frequent intervals, particularly in February, May, and October, very heavy air bombardments taking place on May 3 and Oct. 13, some 500 shells falling in the Gran Via and Vallecas district. On Jan. 11 an explosion in a part of the underground railway, used as a munitions magazine, caused several hundred deaths and considerable damage; and it was estimated that by May constant air bombardment had reduced a quarter of the city to ruins.

The entry of the insurgent troops into Catalonian territory in April, and the consequent severance of Catalonia from the rest of republican Spain, involved the isolation of Madrid, except by air and radio, from the seat of government at Barcelona, road and telephone communication being severed. A decree in early January had required the civil population—about 400,000 persons—to leave the city within a month, and strict rationing was in force for those who remained, the daily bread ration being reduced from five to three and a half ounces per person; clothes rationing, allowing of one suit and two shirts per head per year, was introduced in July.

MAGAZINES AND PERIODICALS. In common with the rest of the press (*see* NEWSPAPERS) the magazine world had a somewhat difficult year in 1938, but, in spite of the disturbed conditions everywhere prevailing, in Great Britain there were few losses to record and, in most cases, circulation figures were still at a comforting height. The *Saturday Review*, founded in 1855 and for long a power in the land though in recent years its career had been somewhat chequered, ceased publication, as did such lesser-known periodicals as *Musical News*, *Popular Music*, *Home Weekly*, and *Travel*, while some of those recorded in the *Ency. Brit. Book of the Year*, 1938 (p. 393), as having just started, including *The British Screen*, *Cinema Guide*, *Fiction*, and *Practical Housekeeping*, came to untimely ends. There were also a number of amalgamations, as *Caravan World* with *Caravan*, *Fashion Age* with *Women's Wear News*, *To-day* with *Pearson's Weekly*, and *Cage Birds* with *Bird Fancy*; but the increase of nearly 600 magazines, reviews, and periodicals published in Great Britain during the year as compared with the previous year (3,702 to 3,119) shows that the publishers still look to the future with hope, even if they cannot count with confidence on an expanding market.

Of the 583 periodicals appearing for the first time in 1938 we may mention: the *Modern Quarterly* (2*s.* 6*d.*, Gollancz), a review devoted to science, philosophy, and the arts and having a special appeal to members of the Left Book Club; *Synopsis*, a digest of British papers and magazines on the lines, as well as in the familiar pocket format, of the American *Readers' Digest*, and *Animal Pictorial* (each 1*s.* monthly); *A.R.P. News* (6*d.* monthly) and *Fire Protection and A R P Review* (1*s.* 6*d.* bi-monthly), whose titles well proclaim their object; *Men and Women* (topical), *Galaxy* (Pearson's, articles and stories), and the *New Pioneer* (literary and political), 6*d.* monthlies; and lastly, one of the greatest successes ever recorded, *Picture Post*. This weekly (3*d.*), on the lines of the popular *Life* of New York, was launched on Oct. 1 by the newly formed Hulton Press, Ltd., on a crisis-ridden country; but its success was immediate and outstanding, and within four months its original printing order of 750,000 copies had risen to over a million and a quarter. This firm earlier in the year had brought out and made a success of *Nursing Illustrated* (2*d.* weekly), and had bought the *Farmers' Weekly* and *Lilliput*, raising the circulation of the latter to 225,000 by the end of the year.

The year saw many changes of personnel. Sir Richard Gregory, F.R.S., resigned the editorship of *Nature*, with which he had been connected since 1893, as editor since 1919; he was succeeded by Mr A. J. V. Gale, M.A., and Mr. L. J. F. Brimble, B.Sc., as joint-editors; and Sir Walter Layton resigned the editorship of the *Economist*, which he had held since 1922, being succeeded by Mr. Geoffrey Crowther. The *Queen* was taken over from Messrs. Hudson & Kearns by Mr. Hector Caird, who became sole proprietor and editor-in-chief; Mr. Eric Parker resigned from the *Field* and was succeeded by Mr. Brian Vesey-Fitzgerald, F.L S., F.R.G.S., as acting-editor; Mr. A. W. Kiddy, for twenty years city editor of the *Spectator*, retired from this position; and Mr. H. Brabrook, who had been for sixteen years publishing manager for the Religious Tract Society, also retired. (L. H. D.)

United States. Every summer finds the American magazine publishing industry suffering a sinking spell, followed by a pick-up in the autumn. In 1938 this seasonal swing was of quite exceptional violence in both directions and, with the extension into secondary and tertiary fields of the influence of the photographic magazines, constituted the industry's most striking movement during the year. No reason but general economic and political conditions appears discernible for the drop, which cost the lives of many minor publications, particularly in the pulp field; and hardly any other is visible for the rise, which brought from the presses so many new magazines that the year closed with a swing of less than two per cent up in the total figure of all magazines published, which remained in the neighbourhood of 7,000.

An examination of the magazine output at the end of the year nevertheless shows some striking differences from its status at the beginning. Of these, the most remarkable is the tendency of the strictly photographic magazines and those which use pictures as an aid to text to blend into each other. *Life*, the archetype and greatest success of the picture group, found it necessary at mid-year to introduce text essays of considerable length into almost every issue; *Look*, *Click*, *Peek*, and other imitators sought similar results with pages of editorial comment and the inclusion of an increasing number of cartoons and general information questionnaires, which reflected the great popularity of the latest device on the radio.

On the other hand *Ken*, the only new magazine of wide general appeal to make its bow during the year, devoted

nearly a quarter of its space to photographs; photographs crowded cartoons and some of the text from the pages of *Coronet*, established themselves firmly in *Scribner's*, and, most striking of all, invaded the great field of the class and trade journals with such effect as completely to alter the appearance of these magazines. The year found *Harper's Bazaar*, one of the great women's fashion periodicals almost completely abandoning the drawings that had been its leading feature since its foundation in favour of the new method of illustration.

It was apparently the competition of the photographic and semi-photographic magazines, as much as the seasonal swing, that caused the great falling off among the pulps, which failed to rally with the general magazines when the autumn upturn came. Subsidiary causes for particular types of pulp magazines were to be found in the quiet but persistent efforts of local authorities throughout the country to keep the sex-pulps (among the best sellers of 1937) off the bookstalls, and the undercutting of the detective pulps' market by the continuing and increasing spread into the general magazines of the detective story. The pulps rather curiously attempted to counteract these influences by improving the literary quality of their output, the increase in the number of stories from these magazines to appear between covers being particularly noteworthy.

There was a great increase both in the number and the general popularity of magazines for amateur photographers, which largely began the year as periodicals of subscription circulation and closed it competing vigorously and successfully for the news-stand dollar. This tendency, it is interesting to remark, was world-wide, being especially notable in the dictatorship countries.

There was also an increase in number, and probably in circulation (though statistics are unobtainable) of the mimeographed Left Wing periodicals, and the year was also marked by the public appearance of magazines giving reports, claimed to be the result of scientific tests, on the quality of various brands of consumer articles.

The imitators of *Readers' Digest* suffered heavy casualties during the summer depression, but the total number of digest magazines showed an increase, thanks to the spread of the device into such specialized fields as law, medicine, photography, and military science. A curious feature of the British and Canadian magazine market was the popularity of second-hand copies of American pulps.

MAIZE: *see* GRAIN CROPS.

MALACCA: *see* STRAITS SETTLEMENTS.

MALAYA, BRITISH, situated in the south-east corner of Asia, between latitudes 1° and 7° N. and longitudes 100° and 105° E., comprises the Straits Settlements, the Federated Malay States, and the Unfederated Malay States (*qq.v.*). The decline in commodity prices and world trade adversely affected development during 1938. The outstanding event of the year was the formal opening, on Feb. 14, of the naval base at Singapore (*q.v.*).

Area and Population:

Area, total 53,240 sq. miles.

Population (est. Dec. 31, 1937) 5,137,470 (Malays 50 per cent, Chinese 33 per cent).

Governor and High Commissioner. Sir T. S. W. Thomas, G.C.M.G.

Languages. English and Malay.

Religions. Mohammedan and Buddhist.

Production 1937:

Rice (1936)	501,400 metric tons
Rubber crude (shipments	478,000 ,, ,,



The Malayan Information Agency]

FRASER'S HILL, PAHANG, FEDERATED MALAY STATES

Copra (export)	140,900 metric tons
Palm Oil (export)	43,500 ,, ,,
Coal	638,000 ,, ,,
Iron Ore	1,600,000 ,, ,,
Tin	96,900 ,, ,,
Bauxite	19,000 ,, ,,
Manganese Ore	44,000 ,, ,,
Gold	1,052 kilograms
Phosphate of Lime (from Christmas Is.)	165,000 metric tons
Tungsten Ore	790 ,, ,,

Overseas Trade:

Imports (1938)	£63,770,000
Exports (,,)	£66,419,000

Communications and Transport 1937:

Roads, total length	7,800 miles
Railways, Government, open to traffic	1,068 ,,
Aircraft: arrivals, 1,666 aeroplanes;	2,453 passengers.
,, departures, 1,658 ,, ;	2,279 ,,

Shipping: net tons entered, 16,766,000; cleared, 16,795,000.

Motor vehicles registered (Dec. 31, 1937): 28,616 private cars, 4,426 hire cars and taxis, 8,691 lorries and vans, 499 others.

Finance and Banking:

Currency Note Circulation, active (Dec. 31, 1937) $84,200,000.

Bank Note Circulation, average (1937) $135,113.

Currency . Straits Settlement dollar: $1=2*s.* 4*d.*

MALAY STATES, FEDERATED. Last of the pre-Federation rulers, His Highness Sultan Salaiman, of Selangor, died at Klang on March 31, 1938, aged 73. He had occupied the throne for forty years. Sir Shenton Thomas, the High Commissioner, proclaimed the third son, His Highness the Hisamud-din Sir Alam Shah, K.C.M.G., as the new ruler at a meeting of Selangor notables during the lying-in-state in the throne room of the Astana Mahkota, on April 5. The question of succession had previously been decided, after consultation. It involved the enforced renunciation of rights by the Raja Muda and the passing over of the late ruler's second son also. On Oct. 14 the Sultan of Perak, His Highness Paduka Sir Sultan Iskandar Shah, died of heart failure at Kuala Kangsar, aged 58. He was succeeded by the Raja Muda, Sir Abdul Aziz. Five Royal Air Force machines dived in salute during the funeral. Educated in England, a notable

sportsman, the former ruler at one time owned a stud of fifty horses The present Sultan is an accepted expert on padi cultivation (G. B.)

Area and Population :

Area, total 27,700 sq miles.

Population (Dec. 31, 1937) total 2,052,729 (Chinese 877,888, Malays 673,970; Indians 472,278; Europeans 9,035)

Perak. 7,980 sq miles, pop 960,844; capital, Taiping.
Ruler. H H the Sultan Abdul Aziz, al 'Mu 'Tassim Bil'lah Shah, K.C M.G.

Selangor: 3,160 sq miles, pop. 649,507, capital, Kuala Lumpur.
Ruler. H H. the Hisamud-din Sir Alam Shah, K C M G

Negri Sembilan: 2,580 sq. miles; pop. 276,620, capital, Seramban.
Ruler. H H. Tuanku Abdulrahman, K.C.M G

Pahang. 13,820 sq. miles, pop 205,758; capital, Kuala Lipis.
Ruler H H. al-Sultan Abu Bakar Shah, K C.M.G

Communications and Transport 1937 :

Roads, metalled and gravelled . . 2,939 sq. miles

Motor vehicles registered (Dec. 31, 1937): 12,538 private cars, 1,627 hire cars and taxis, 2,917 lorries and vans, 179 other.

Finance 1937 :

Revenue $80,865,000, Expenditure $71,143,000.

Public Debt (Dec 31, 1937) . . . $65,285,741

Education 1937 : (average enrolment of scholars)

English schools under Government supervision, 46; scholars, 17,229 (Europeans and Eurasians 1,033).

Vernacular schools: Malay, 564; scholars, 51,158
,, ,, Tamil, 372; ,, 16,223.
,, ,, Chinese, 456, ,, 39,700.

MALAY STATES, UNFEDERATED. At the beginning of 1938 a special meeting of the Johore State Council passed a measure completing the formality of divorce between the Sultan and Sultanah of Johore, who had been married in 1930 at Prince's Row Register Office, London, and at the Woking Mosque. Formerly a Scottish widow, the Sultanah Helen had left Johore for England earlier in the year. The marriage was then annulled, according to Moslem law, by the Sultan saying "Talak" (I divorce) once, in the presence of witnesses. In April the Royal Air Force purchased land at Sungei Patani, Kedah, for the construction of a Royal Air Force station, which is budgeted to cost £386,000. (G. B.)

Area and Population :

Area, total 24,347 sq. miles.

Population (Dec. 31, 1937) 1,773,776 (Malays, 1,196,010; Chinese, 415,410; Indians, 132,440; Europeans, 1,831).

Johore: 7,330 sq. miles; pop. 605,416; capital, Johore Bahru.
Ruler. H.H. Sir Ibrahim, G.C.M.G., Sultan.

Kedah: 3,660 sq. miles; pop. 492,219; capital, Alor Star.
Ruler. H.H. Sir Abdul Hamid Tajudin, K.C.M.G.

Perlis: 310 sq. miles; pop. 54,237; capital Kangar.
Ruler. H.H. Syed Alur, C.M.G., Raja.

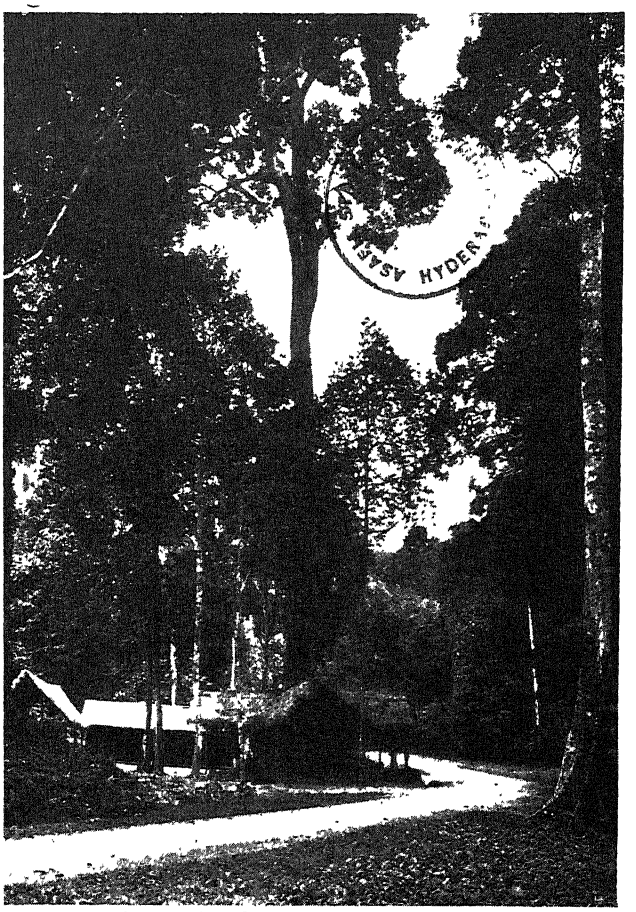
Kelantan: 5,750 sq. miles; pop. 390,342; capital, Kota Bharu.
Ruler. H.H. the Sultan Ismail, K.C.M.G.

Trengganu: 5,050 sq. miles; pop. 196,846; capital, Kuala Trengganu.
Ruler. H.H. Sulaiman Badaru'l-'alam Shah, K.C.M.G.

Brunei: 2,247 sq. miles; pop. 34,716; capital, Brunei Town.
Ruler. H.H. Ahmed Tajudin, Sultan.

Communications and Transport :

Roads, metalled and gravelled . . . 1,738 miles



The Malayan Information Agency]
A ROAD THROUGH A MALAYAN JUNGLE

Motor vehicles registered (Dec. 31, 1937): 3,769 private cars, 1,601 hire cars and taxis, 1,920 lorries and vans, 141 other.

Finance 1937: (000's)

	Johore	Kedah	Perlis	Kelantan	Trengganu	Brunei
	$	$	$	$	$	$
Revenue	20,197	7,865	754	3,209	2,660	1,049
Expenditure	18,398	6,995	636	2,757	2,645	653
Public Debt	—	—	100	5,183	3,000	—

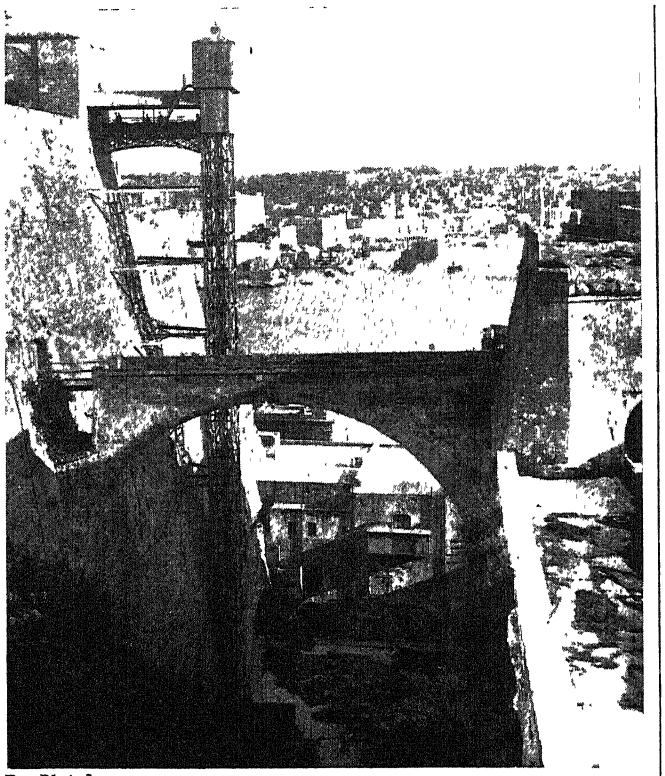
Education 1937 : (average enrolment of scholars)

English schools, 27; scholars, 3,775.

Vernacular schools: Malay 363; scholars, 41,842.
,, ,, Tamil 100; ,, 3,608.
,, ,, Chinese 256; ,, 14,528.

Moslem religious schools 102; ,, 8,754.

MALTA. It was announced in July 1938 that Sir Harry Luke would be succeeded as Lieutenant-Governor by Mr. John Adams Hunter. In March, the Court of Appeal at Valletta delivered its judgment in a case brought by Lord Strickland, alleging that Malta, having been acquired by Great Britain neither by conquest nor cession, but by compact between the Maltese nation and the King of England, was entitled to representative institutions, and that no taxation could be levied without the consent of the people's representatives. The Court upheld these contentions, but the Privy Council in July reversed the judgment, which,



Fox Photos]

BARACCA LIFT, MALTA

had it been confirmed, would have invalidated all legislation by Order in Council since the revocation in 1936 of the 1921 constitution. The Colonial Secretary, Mr. Malcolm MacDonald, announced in parliament in July that, although there could be no restoration of responsible government within any period that could at present be foreseen, a legislature, the Council of Government, was to be set up, consisting of eight official members, two unofficial members nominated by the Governor, who would preside over the council, and ten members elected by the people on a franchise similar to that in the 1921 constitution for the legislative assembly. Ministers of religion would not be eligible for seats on the council, and the language question would be excluded from discussion or control by it. Mr. Hore-Belisha, Secretary for War, visited the island in April and inspected its defences. An Italian naval squadron under Vice-Admiral Count Riccardi paid a courtesy visit in June.

Area and Population :
Area 122 sq. m. (Malta 95 sq. m., Gozo 26 sq. m., Comino 1 sq. m.).
Population (est. Dec. 31, 1937) 264,663
Governor. Gen. Sir C. Bonham Carter, K.C.B.
Languages, official. English and Maltese.
Religion. Christian (Roman Catholic).
Production 1937 :

Wheat	8,900 metric tons
Barley	5,200 ,, ,,
Potatoes	34,200 ,, ,,
Wine	21,000 hectolitres
Tourist Traffic, annual value	*c* £150,000

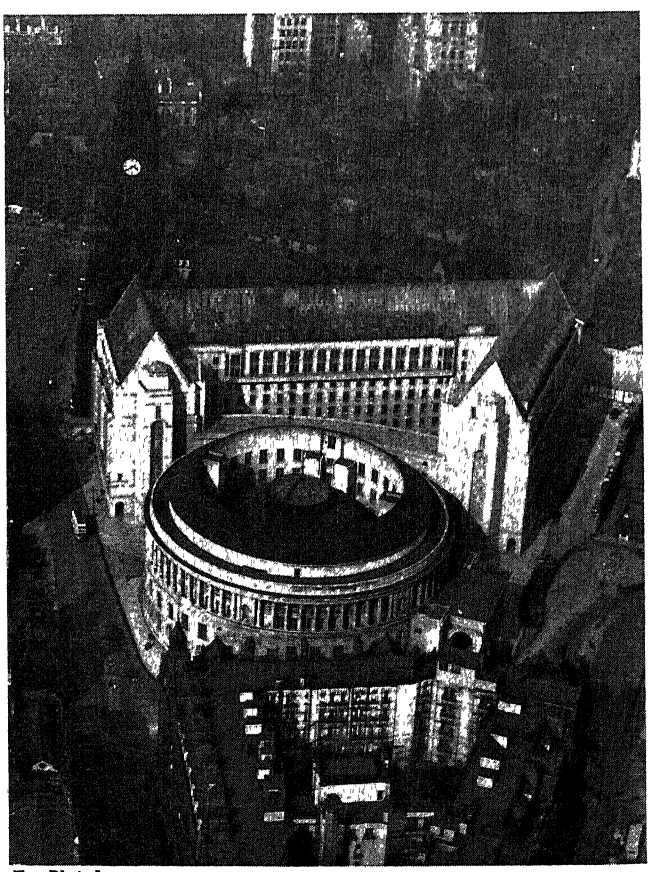
Overseas Trade 1937 :
Imports : merchandise, £4,019,089 ; bullion and specie, £480.
Exports : domestic merchandise £250,566.
Re-exports : merchandise, £444,013 ; bullion and specie, £5,318.
Roads. Motor : Malta 223 miles ; Gozo 68 miles.
Finance :

Revenue, (est. 1938–39)	£1,423,556
Expenditure, ,,	£1,422,521
Public Debt (end of 1936–37)	£79,081

Education 1937 :
Elementary : government schools, 61 , scholars, 29,767
Secondary . ,, ,, 4 ; ,, 1,279
Motor vehicles licensed (Dec. 31, 1936) 3,010 cars and taxis, 597 chars-a-bancs, 867 lorries, 461 cycles

MANCHESTER. Great Britain's fifth largest city, with an area of 27,256 acres, had at the census of 1931 a population of 766,738, which is estimated to have decreased by 1937 to 751,371 as a result of the commonly noticed drift from the larger cities towards suburban areas, several of which, in what may be called "Greater Manchester", have in recent years obtained charters of incorporation

Manchester during 1938 celebrated the centenary of her incorporation by an Exhibition of Civic Services, which attracted 117,000 visitors in a fortnight, and by an historical pageant depicting incidents in the city's development. The fine extension to the Town Hall was opened in May by H.M. King George VI. Progress continues in the development of Wythenshawe, Manchester's garden suburb on a Corporation estate, five miles from the centre of the city ; this now covers nearly 4,000 acres ; over 8,000 houses have been erected ; provision is made for residential areas, an agricultural belt, parks, shops, an industrial area, and an ultimate population of 100,000 Manchester's trams are rapidly being replaced by buses and trolley-buses, and the river Irwell is being covered at Blackfriars to provide a large transport station. Manchester is the second metropolis of the United Kingdom, and, besides being one of its principal ports (some 4,000 vessels entered the Manchester Ship Canal in 1937), now has municipal airports at Ringway



Fox Photos]

EXTENSION TO MANCHESTER TOWN HALL, OPENED BY THE KING, MAY 18, 1938. THE OLD TOWN HALL IS BEHIND, THE LIBRARY AND THE MIDLAND HOTEL ARE IN THE FOREGROUND

and Barton, the former having connexions with all the principal European air routes. The volume of business transacted in the city is indicated by the figures recorded by the Association of Manchester Clearing Bankers during 1937—more than £565,000,000 Many new industries have been attracted to the district, and private firms have in the last year embarked upon ambitious and expensive schemes of building development.

MANCHUKUO (*Manchuria*), an empire, closely connected with Japan, in north-eastern Asia. Its capital is Hsingking, its ruler the Emperor K'ang Te. The area is 460,383 sq. miles; its population (June 30, 1936) 33,836,898, including about 700,000 Koreans, approximately 230,000 Japanese, about 50,000 white Russians, and some 3,500 foreigners of other nationalities Population of chief cities: Hsingking (1936) 303,301; Harbin (1936) 500,526, Mukden (1935), 388,841; Antung (1935) 154,575.

For six years after its establishment, Japan and the Central American Republic of El Salvador were the only countries to extend *de jure* recognition to Manchukuo Italy recognized it on Nov. 30, 1937; and Germany, who maintains a special trade representative in Hsingking, did so in 1938 In 1938 also Poland extended *de facto* recognition to Manchukuo. The United States and Great Britain maintain consulates in Mukden and Harbin; and their consuls deal with the established authorities on an informal basis.

Finances and Banking. The unit of currency is the Manchukuo yuan, equivalent in value to the Japanese yen (1*s.* 2*d.*). The budget, which has been increasing in size, amounted to 304,555,000 yuan in 1938.

Trade and Communications. Manchukuo's exports and imports in the year 1937 were valued at 645,297,656 yuan and 887,411,696 yuan respectively. Japan supplied 627,229,748 yuan worth of imports and purchased 277,087,992 yuan worth of exports. Manchukuo has about 6,000 miles of railway lines, of which about 2,000 were constructed after the creation of the new State. The principal towns are connected by a regular commercial air service.

Agriculture, Natural Resources, Manufactures. Manchukuo's most important crop consists of soya beans. Kaoliang, millet, corn, and wheat are also produced in substantial quantities, together with small amounts of rice, cotton, and tobacco. In 1937 Manchukuo produced 4,200,000 tons of soya beans (value 273,000,000 yuan); 4,441,690 tons of kaoliang (value 266,501,400 yuan); 3,451,000 tons of millet (value 189,805,000 yuan); 2,261,000 tons of maize (value 128,877,000 yuan); 1,156,300 tons of wheat (value 115,630,000 yuan).

BIBLIOGRAPHY. *Japan-Manchukuo Yearbook*, 1937; Owen Lattimore, *Manchuria · Cradle of Conflict.* (W. H. CH.)

MANDATES. During 1938, attention continued to be focused upon the situation in the mandated territory of Palestine (*q v.*). French negotiations with Syria and Lebanon (*q v*) and the future of the Japanese mandate also aroused interest.

Germany's Colonial Claim. Apart from this, the question of Germany's claim for the return of her former colonies in full sovereignty led to counter-demonstrations by the native and British white populations in Tanganyika and elsewhere, and to categorical statements by the governments of the Union of S. Africa, Australia, and New Zealand that they had no intention of giving up their mandates.

Mandates Commission. (i) *34th Session.* The Mandates Commission at its 34th session (June 8–23) noted the continuance of the deadlock in Palestine, the measures taken to restore public order, the limitation of Jewish immigration, as an emergency measure, and the appointment of a technical commission to examine the question of partition. It declared that it viewed the situation with the utmost concern, and hoped for a final decision regarding the future status of the territory with as little delay as possible. This hope was reiterated by the League Assembly in September.

The Commission hoped that the objections raised to the imposition of an income-tax in Tanganyika (British "B" mandate) would not prove insuperable. It also took note of the views of the mandatory Power that, except for claims under the Congo Basin Convention, the Agreement of 1925 with the U.S A. granting equality of economic treatment to American nationals, and various trade agreements granting most-favoured-nation treatment in the mandated territory, States non-members of the League could not claim economic equality for their imports under the terms of the mandate or Article 22 of the Covenant

The Commission noted that the continuance of a marked divergence of feeling amongst the European community in S.-W. Africa (Union "C" mandate) was due to external causes rather than to local factors. It urged the administration not to withhold the granting of a certain degree of material assistance to the native population.

The Commission was concerned regarding the safeguarding of native property in Togoland (French "B" mandate), and with the high death and infant mortality rates in Nauru (British Empire "C" mandate), and requested further information on road development, education, recruiting of native labour, missionary activities, and land tenure in New Guinea (Australian "C" mandate).

(ii) *35th Session.* The Mandates Commission at its 35th session (Oct 24–Nov. 8) was confronted with the notification of Japan's intention to discontinue the co-operation which had been maintained since her withdrawal from the League. It considered the report on the Pacific Islands under Japanese "C" mandate, without the presence of a duly accredited representative. It also had before it a Chinese communication drawing attention to the fact that the Japanese National Mobilization Bill of May 1938 (a war measure directed against China) had been applied also to the Japanese Mandated Islands. It was recalled that at a previous session the Japanese representative had been asked questions concerning the alleged establishment of naval bases in certain islands. The Commission reported that information was lacking on a number of important points and requested the Council to obtain supplementary details from the Japanese government.

In examining the report for Syria and Lebanon the Commission noted certain measures introduced by the mandatory Power providing for a regime of increased independence. It drew attention to the general conditions, including the effective protection of minorities, which had to be fulfilled before the mandate could be terminated by the League and the population considered capable of self-government. The Commission also questioned the accredited representative regarding the steps taken by the authorities to prevent the infiltration of reinforcements for the rebels in Palestine and the anti-British activities of the Mufti, who had taken refuge in the Lebanon. The Commission also examined reports for Ruanda-Urundi (Belgian "B"), Cameroons (French "B"), Togoland (British "B"), and Western Samoa (New Zealand "C").

See Reports of the Permanent Mandates Commission (34th and 35th Sessions); *Report of the Secretary-General of the League of Nations*, 1937–38. (S. A. HE.)

Table of Mandated Territories

Territory	Area	Date of Mandate	Mandatory Power	Former Title	Former Administration
South-West Africa, including Caprivi Zipfel, formerly part of Bechuanaland Protectorate	317,725 sq miles	Dec. 17, 1920	Union of South Africa	German South-west Africa	The German Empire
Togo, comprising: (1) Togoland, *i.e.* western section, excluding the seaboard	13,040 sq miles	July 20, 1922	Great Britain	Togo	The German Empire
(2) Togo, *i.e.* eastern section and seaboard	20,000 sq miles		France		
Cameroons, comprising: (1) Cameroons adjoining Nigeria	34,081 sq miles	July 20, 1922	Great Britain	Kamerun	The German Empire
(2) Cameroons adjoining French Equatorial Africa	161,200 sq miles		France		
Tanganyika	360,000 sq. miles	July 20, 1922	Great Britain	German East Africa	The German Empire
Ruanda-Urundi	21,200 sq. miles		Belgium		
Palestine	10,100 sq. miles	Sept. 29, 1923	Great Britain	Palestine	The Ottoman Empire
Transjordan	34,700 sq. miles		Great Britain	Part of the Wilayat of Syria	
Syria and Lebanon	77,700 sq. miles		France	Syria	
New Guinea, Territory of, comprising: (1) North-eastern New Guinea (*i.e.* the northern section of south-east New Guinea)	93,000 sq. miles	Dec. 17, 1920	Commonwealth of Australia	Kaiser Wilhelm's Land	The German Empire
(2) Bismarck Archipelago (New Britain, New Ireland, the Admiralty Isles, etc.)				Bismarck Archipelago	
(3) Certain of the Solomon Islands (Bougainville, Buka, etc.)				German Solomon Islands	
Western Samoa, comprising Savaii, Upolu, etc.	1,133 sq. miles	Dec. 17, 1920	New Zealand	German Samoan Islands	The German Empire
Nauru	8 sq. miles	Dec. 17, 1920	British Empire, as represented by Great Britain, Australia and New Zealand	Nauru	The German Empire
Pacific Islands North of the Equator, comprising: (1) The Marianne or Ladrone Islands (except Guam)	811 sq. miles	Dec. 17, 1920	Japan	Marianne Islands	The German Empire
(2) The Caroline Islands, comprising the Eastern Carolines and Western Carolines, together with Yap Island and Pelew				Caroline Islands	
(3) The Marshall Islands				Marshall Islands	

MANITOBA. During its 1938 session the Provincial Legislature passed, with only one dissentient, a resolution urging the abolition of Canadian appeals to the Judicial Committee of the Privy Council. A motion brought forward by a Co-operative Commonwealth Federation member for the closing of Government House, the residence of the lieutenant-governor, failed to secure support.

A Commission of three was appointed by the provincial government to investigate the financial position of the city of Winnipeg as a result of difficulties arising from its relief problem.

Manitoba's wheat production in 1938 is estimated at 51 million bushels, as against 48 million bushels in 1937. In consequence of lower prices, however, the Province's total farm income was about 25 per cent less.

Before the end of the year an important conference on the wheat situation, attended by 300 representatives, was held at Winnipeg, on the invitation of the premier (the Hon. John Bracken)

The bicentenary of the arrival of Pierre Gauthier de la Verendrye at the junction of the Assiniboine and Red Rivers in 1738 was celebrated in September, when a bronze statue of the explorer and a commemorative cairn were unveiled.



Fox Photos]

PARLIAMENT BUILDINGS, WINNIPEG

Area and Population :
Area 246,512 sq miles
Population (est 1937) 717,000 (Indians 15,417)
Chief Towns (pop 1931 census) Winnipeg (218,785), Brandon (17,082), St Boniface (16,305)
Premier. Hon John Bracken
Production :
Field crops (1937) $90,930,000
Dairy produce (,,) . . . $13,362,600
Fisheries (1936) $1,667,371
Minerals (1936) $11,315,527 (copper, 29,853,220 lb, cadmium, 148,133 lb, gold, 139,273 fine oz, silver, 791,489 fine oz, zinc, 36,744,951 lb.)
Minerals (total value 1937) . . . $16,055,743
Water Power (Jan. 1, 1938) developed . 405,325 h p
Manufacturing Industry 1936 :
Establishments, 1,011, capital, $118,515,841; employees, 22,507, gross value of products, $122,050,502
Communications and Transport :
Roads (March 31, 1937) total 34,377 miles (earth 29,782 miles)
Railways (Dec 31, 1936) . . 4,860 miles
Motor vehicles licensed (Dec 31, 1936) cars 59,470, commercial 10,500; buses 80; cycles 590
Finance :
Revenue, ordinary (1935–36) . . . $16,415,993
Expenditure, ordinary (1935–36) . . $16,294,294
Debt, gross bonded (1936) . . . $95,480,881
Education : controlled schools (1936) scholars 142,482

MARIE, Queen of Rumania, was born at Eastwell Park, Kent, on Oct. 29, 1875, the eldest daughter of the Duke of Edinburgh, Queen Victoria's second son. She died at Pelishor Castle, Sinaia, on July 18, 1938 A biographical notice of her may be found in the *Ency. Brit.*, vol. 14, p 882. Queen Marie took little part in public life after the death of her husband, King Ferdinand, in 1927. In 1934 and 1935 appeared the three volumes of her *The Story of My Life.*

MARINE BIOLOGY. Marine biology progressed in many directions during 1938. A new vessel, "Research", of the British Admiralty has been constructed to continue the work of the "Carnegie", which was destroyed by fire in 1929 at Apia, Western Samoa. Gaps in observation which would have been filled by the "Carnegie" will now be filled by the operation of the "Research". The Danish government has also completed a new research ship "Dana", costing approximately 1,000,000 krone, equipped with all the modern devices for scientific observation. The German ship "Meteor" has resumed oceanographic and meteorological observations, covering an area between Cape Verde and the West Indies

During the drift from the North Pole to the coast of Greenland, U.S.S.R. scientists progressively took depth soundings, water samples, and made other hydrographical observations. They measured direction and velocity of the under-floe currents and established the existence of abundant organic life.

Scientific reports of the Nautilus expedition to the Arctic continue to appear, published by the Linnean Society of London, one on Copopoda and another on Appendicularians. A wide variety of scientific findings also are reported in the current issues of the Marine Biological Association of the United Kingdom.

Research recorded in 1938 includes a systematic study of the sea-horse (Hippocampus), a composite denizen of the deep having a lilliputian face, a prehensile tail, and a pouch like that of a kangaroo, but yet a fish. Its most curious biological anomaly is that the male gives birth to living young. The female places unfertilized eggs, a few at a time, in the pouch-like sac of the male, where, in a manner yet unknown to science, they are caused to undergo fertilization and development Another piece of observation has established that a lobster when born is only one-third of an inch long and reaches two inches after a year. During this growth interval it sheds the outer covering (carapace) sixteen times By the time it is 10½ inches in length, it has discarded its old coverings thirty times.

In the western hemisphere the year 1938 witnessed the fiftieth anniversary of one institution of marine biology and recorded the birth of another. The marine biological laboratory at Woods Hole, Massachusetts, the oldest of its kind in America (1888), has grown from a personnel of seven investigators and eight students, housed in a poorly equipped building which served all purposes, to an institution of over 500 scientists and students, provided with modern facilities of all sorts. Its influence in matters of marine biology is world-wide and its scientific programmes through the years have reached out internationally through its own publication, the *Biological Bulletin.* Duke university established in 1938 a new marine biological laboratory at Piver's island, a short distance from the mainland, near the town of Beaufort, North Carolina. Because of its rich fauna and flora, Beaufort was earlier (1902) selected by the U.S. Bureau of Fisheries as a site for one of its fisheries stations.

The director of the Woods Hole Oceanographic Institute, in his annual report, reviews a number of abstracts dealing with studies in Atlantic waters such as light penetration, surface layers, tropism to light and gravity, reproduction in microplankton, vertical migrations, current structure, oxygen concentration in the North Atlantic, and sedimentation on the continental shelf. On July 16 a study was initiated jointly by the Bermuda Biological station and the Royal Society of London in an attempt to measure the oscillations of the Gulf stream and to deduce the effect these may have upon weather conditions over the Atlantic. Co-operating in this study are two boats, the "Atlantis" of the Woods Hole Institution and the "Culver" of the Royal Society.

Research in the Pacific has recently received added impetus in the establishment of the Allen Hancock Foundation for Scientific Research and the erection of a new building on the campus of the University of Southern California to serve as headquarters of the Foundation and the repository of the specimens gathered by the Allen Hancock Pacific expeditions. The seventh expedition, in April, returned with much valuable material from Cocos islands, Galapagos, and the Bird islands of Peru and Ecuador. Among the accomplishments were the capture of the pug-nosed sea lions in Peru and the taking of natural-colour cinema films of Quichua Indians. The second Eastern Pacific Zaca expedition of the New York Zoological Society, Dr. William Beebe directing, was completed off Central and South America. Emphasis in these studies is placed upon ecological relationships, habits, and colour schemes of the living forms rather than upon their structural or taxonomic position. An attempt is made to study the similarities and differences between the Atlantic and Pacific forms collected

BIBLIOGRAPHY. See reports in *Nature, Science, Scientific Monthly, Journ. Linn. Soc.*; Roberts, *Wonders of the Sea*, 1937; Beebe, *Zaca Venture*, 1938; R. M. Schrenkeisen; *Field Book of Fresh Water Fishes of North America, North of Mexico*; Coston *Beneath the Surface*, 1938; Kumada, *Marine Fishes of the Pacific Coast of Mexico* (Maruzen Co., Tokyo, 1938); Richards *Animals of the Sea-Shore*, 1938. (F. M. B.)

MARINE INSURANCE. Beyond all question the outstanding event in the Marine insurance market during 1938 was the "waterborne" war risk agreement. Eve

since 1930 underwriters at home and on the Continent had been concerned at the devastating losses which might be caused to accumulations of goods at ports by modern weapons of war. The non-marine market acted first when, in 1937, the Companies and Lloyd's Underwriters agreed that they could no longer accept war risks on shore. The marine market, under an agreement made in Dec. 1937, followed suit by announcing that on and after Feb 1, 1938, the cover of the war risk policy would only protect goods whilst actually on board the ocean-going vessel, the risk in warehouse and in craft being entirely excluded. The English market, giving the lead in this agreement, had been assured of support from Continental markets by a resolution approving the principle of the " waterborne " agreement adopted at the Baden Baden conference of the International Marine Insurance Union in the previous September. The Continent loyally fulfilled its pledge. Market after market adopted a " waterborne " war risk agreement based on that of the English market, and to-day it is impossible to find cover for war risks on shore.

Banks and commercial interests naturally protested against the new development. It was claimed, with some justice, that it caused a gap in the security on which shipments of goods are financed, but the reason officially advanced for eliminating shore risks was that " under modern conditions of warfare such widespread destruction of property is possible that the accumulated cargo values at certain ports would create liabilities which even the whole marine insurance market might well be unable to meet ".

In the opinion of many the agreement was made only just in time. Had underwriters been pledged to shore risks during the crisis of September, conditions in the insurance market would have become impossible.

As it was the situation was tense and the rates on cargo afloat rose to very high figures. During the crisis a deputation, headed by the London Chamber of Commerce, asked the Board of Trade to institute a government war risk office forthwith, but the reply was that the government scheme, known to be in readiness, would only be put into effect if the nation became involved in a major war and that it would follow current market practice. This is assumed to mean that even the government will not accept shore risks, but will confine its scheme to goods afloat and the commercial community is still seeking some way out of the *impasse*.

In the Hull market the improvement of rates brought about by the market agreement of 1937 has continued under a supplementary agreement which requires higher rates on a sliding scale on all renewals of risks that have not shown good profits over the last four years. Even on this basis it is thought that the business may not prove profitable in view of the rising cost of repairs and the increasing number of casualties although there has been a slight decline in the number of casualties reported during the latter part of 1938.

In the cargo market the situation has been largely obscured by the fact that underwriters are receiving two premiums on every risk: one for marine perils and one for war risks. In consequence, the business as a whole has proved profitable since there have been no war losses except in the Spanish and Chinese zones, where high rates have set off the claims incurred. It is claimed, however, that marine cargo business could not stand scrutiny by itself, and that if war risk premiums ceased, it would immediately prove that the business is on an unprofitable basis. To improve matters a movement is on foot to adopt minimum rates for bulk cargoes, such as coal, grain, ore, etc., but it is thought that until war risk business either ceases, or begins to bring claims, there is little hope of any success in this direction. A feature of the year at Lloyd's was the opening of the new " Brokers' Room "; an annexe to the main underwriting room. This was made possible by the acquisition by Lloyd's of the Royal Mail Building, always integral with Lloyd's Building, but previously occupied by the Royal Mail Line. During 1938, Lloyd's granted a licence to a Dutch company to carry on salvage operations in the hope of recovering more treasure from the " Lutine " frigate, wrecked on the Dutch coast in 1799, the bell of which hangs in the underwriting room. A tin dredger destined for work in the Dutch East Indies was used, but only one ingot of gold, a number of coins, and some relics of no intrinsic value were recovered. (D. K-P)

The most serious disaster in the United States in 1938 was the hurricane on Sept. 21, which swept across Long Island and the Sound through New England. This caused property damage estimated at hundreds of millions of dollars Marine underwriters suffered losses under many forms of policies Many steamers, lighters, tugs, barges, and similar craft all along the coast produced claims under hull policies, and the hundreds of yachts and motorboats that were damaged or destroyed produced what undoubtedly was the most severe loss the yacht market ever sustained in one disaster. But the heaviest loss was on shore, under transportation policies covering goods on docks and wharves, and merchandise such as textiles being processed in New England mills.

It is probable that when all the results are in, 1938 will show a loss to marine underwriters and the prospects for 1939 are not bright.

MARKET GARDENING. The recognition of the importance of vitamins in maintaining health and of their abundant presence in salads and vegetables has led to an increased demand for and production of market garden crops in most countries. The increase is particularly manifest in salad crops, carrots, spinach, etc., which have received special recommendation by the medical profession. Salads are now needed all the year. Production in the winter and early spring is achieved by the use of glass frames, of which there are two types: (*a*) the French, and (*b*) the Dutch. Culture in frames has much extended in England, France, Belgium, Holland, and Scandinavia. The chief crops raised in frames are lettuce (May King,



Fox Photos]

A WOMAN STUDENT OF THE SPARSHOLT FARM INSTITUTE, HAMPSHIRE, AT WORK WITH A MOTOR CULTIVATOR



Sport & General]
GATHERING MUSHROOMS AT THAXTED, ESSEX, FROM OUTHOUSES MADE OF STRAW AND KEPT PITCH DARK INSIDE

Gottë a forcer), cauliflower (Erfurt types), and carrots (Amsterdam forcing), and to a lesser extent, radish and spinach. Choice of varieties is all-important; the soil must be fertile in humus and the frames given personal attention. This system is eminently suited for small holders.

Irrigation Schemes. Throughout Europe there was very little rain during the summer months of 1938 and market gardeners experienced difficulty in maintaining vegetable production at the normal level. The progress made last year in installing irrigation systems to provide artificial rain was continued and expanded during 1938. In England several expensive and costly plants have been established. Such holdings are very intensively cultivated and continuously cropped to the finer types of salads and the more expensive vegetables. The produce from these irrigated farms is of best quality and realizes the highest prices.

Machinery for Market Gardening. *Vegetable Farming.* Small tractors and motor cultivators specially adapted for use in market gardens have become popular in recent years, and are now largely used in market gardens. They are less expensive than hand labour and more convenient than horses. Though the power varies from two to five h.p., the machine can plough, disk harrow, and cultivate the lighter loams. On larger holdings machines have been introduced for planting cabbages, cauliflowers, brussels sprouts, celery, and strawberry plants, and to supply each plant with water at the time of planting. Mechanical hoes are occasionally seen. Such machines are costly and suitable only for large holdings. On these vegetable farms less labour per acre is required, and the system becomes less intensive than on the old market gardens.

Composting. In many countries the realization has come that artificial fertilizers alone are insufficient and that the humus contents of the soil must be maintained. Supplies of stable manure are not sufficient, and the old system of composting has been revived. All waste vegetable matter, weeds, cabbage stumps, grass cuttings, etc., are built into heaps and either by the cyanamide process or the indoré process the vegetable matter is turned to humus, the vital fertilizing basis of all market-garden soils.

Variety Testing. In these days the variety of vegetables is almost legion, but only a few are really satisfactory for commercial production. This has led to government action. In Canada, for instance, varieties cannot be sold unless they have been tested. In Germany official trials of garden plants are carried out and the best registered as Reich varieties, and only these can be listed in catalogues and sold for planting In England, trials of vegetables are conducted by the Royal Horticultural Society and the National Institute of Agricultural Botany and recommendations made; freedom of selling and planting is preserved.

(H. V. T.)

MARKETING BOARDS IN GREAT BRITAIN.

The *Ency Brit. Book of the Year* 1938 described agricultural marketing boards in Great Britain as "bodies set up by producers of agricultural products with the object of securing the advantages of large-scale organization", deriving their status in law and their functions from schemes framed and submitted under the Agricultural Marketing Acts, 1931 and 1933.

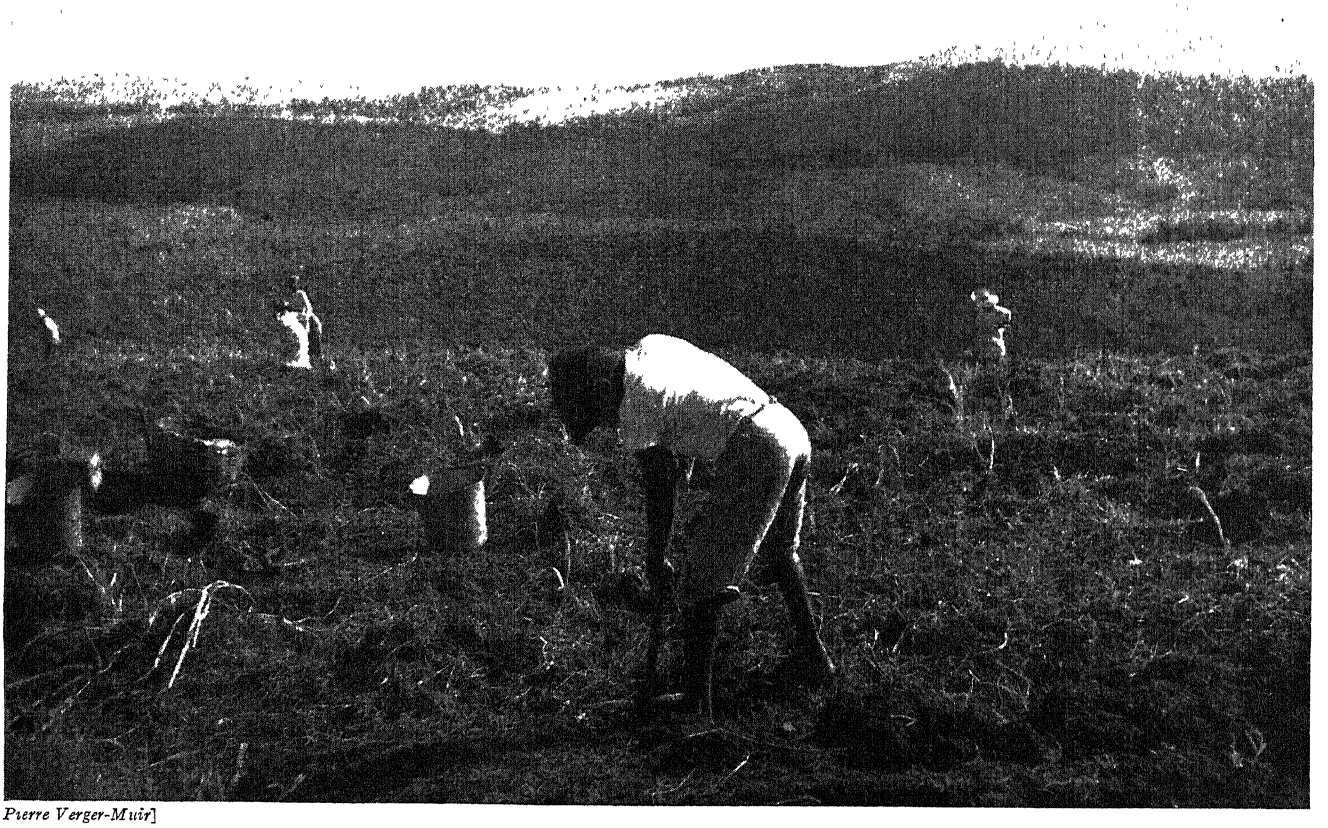
There are to-day, as then, eight schemes, none having been approved during the past twelve months One new scheme for regulating the marketing of milk products in Great Britain has been submitted. A scheme for regulating the marketing of sugar-beet in Great Britain which had been prepared and submitted by producers was withdrawn.

For the existing eight schemes the period has in most cases been one of consolidation. The boards continued to build up their organizations and to develop their experience in the technique of market regulation.

Thus, in the case of the English scheme for regulating the marketing of hops, a crop for which there is no market except for sale to brewers, the Board, following a report by a reorganization commission appointed by the minister of agriculture and fisheries, are seeking parliamentary approval for a further period of years for an amended system of individual producers' sales quotas, which system has been operating for the past four years concurrently with a five-year price agreement with the Brewers' Society.

There are many markets for milk. About two-thirds of the sales of home-produced milk are for human consumption in liquid form. Milk is also sold in considerable quantities for manufacture into cream, butter, cheese, dried and condensed milk, its value for these purposes depending in varying degrees on the price of the imported product. The chief effort of the English Milk Marketing Board during the past year has been in the direction of so controlling the sale of milk as to ensure that it is used for the most profitable purpose. In co-operation with the government, the Milk Marketing Boards are offering increased premiums to encourage the production of higher quality milks, such as "accredited" or "standard", "tuberculin-tested", or milk from attested herds.

In the case of the Pigs and Bacon Marketing Schemes experience showed the need for a radical overhaul of the machinery. The Schemes were thought to be fundamentally sound but some of the machinery was too rigid and some powers inadequate. The new plan, which took effect in July 1938, when the Bacon Industry Act received the royal assent, provides for the strengthening of the central co-ordinating body, the Bacon Development Board, which will in future control the policies of the constituent Marketing Boards, of which one, the Pigs Marketing Board, regulates the sales of pigs to bacon curers, and the other, the Bacon Marketing Board, regulates the sales of bacon. Under this Act the chief method for the sale of bacon pigs to curers will be by "long contracts", covering deliveries over one year. The Act, however, enables the Development Board to grant general or special exemptions from



Pierre Verger-Muir]

CULTIVATION OF SUGAR CANE FIELDS IN MARTINIQUE

the requirement that pigs shall only be sold on long contract. The Act makes provision for the rationalization of the curing industry under a " factory rationalization scheme " and provides for a period of three years, while reorganization is expected to take effect, a sliding scale of exchequer assistance, varying in accordance with rises and falls in the prices of animal feeding stuffs and of bacon.

Other legislation has been passed in the last few years having as one of its objects the better organization of the agricultural industry but vesting control in independent commissions appointed by ministers and not in the hands of persons elected by the industry concerned. An example is the Livestock Industry Act, 1937, which provides, *inter alia*, for such matters as the improvement through centralization of the facilities for the slaughter of livestock and the rationalization of the system of livestock auction markets. Among the reasons for this difference of treatment are the lack of homogeneity in the interests affected and the fact that they are in many cases not agricultural producers as defined in the Agricultural Marketing Acts. Thus, the interests affected by the Livestock Industry Act include local authorities, market authorities, auctioneers, and butchers. The Act takes no power to regulate the actions of individual livestock producers, and it remains open to the latter to prepare and submit a scheme under the Agricultural Marketing Acts for the regulation of their marketing arrangements.

Among the provisions of the Agricultural Marketing Acts is one making it obligatory for every scheme under the Acts to require the board to impose monetary penalties on and recover them from any registered producer who contravenes provisions of the scheme. The propriety of this method of enforcement has been questioned, both inside and outside parliament, and accordingly the government have appointed a committee " to enquire into the present arrangements for the imposition and recovery of penalties for contraventions of schemes established under statute for the organization of agriculture and other industries, to consider whether any modification of these arrangements is desirable and practicable and to make recommendations ".

BIBLIOGRAPHY. *Report on Agricultural Marketing Schemes for* 1936 (Cmd. 5734, 1938); *White Paper on Milk Policy* (Cmd. 5533, 1937); " Summary of Principal Provisions of Bacon Industry Act " (*Journal of Ministry of Agriculture*, Sept. 1938); *Hops: Report of Reorganisation Commission* (Ministry of Agriculture and Fisheries, Economic Series, No 46).

MARRIAGE STATISTICS: *see* VITAL STATISTICS.

MARTINIQUE, a French West Indian colony; governor, M. Décharte. Area 385 sq. m.; pop. (1936 census) 234,505 (officially est. 1938) 247,000; Chief cities: Fort-de-France, the capital, 48,395; Le Lamentin, 16,303. Martinique's appointed governor rules with an elected council, and the island is also represented in the French Parliament. The colony has 373 miles of motor highways, and 124 miles of exclusively freight railway. In 1937, imports aggregated in value 213,700,000, and exports 231,000,000 francs, against 155,632,000 and 191,163,000 respectively in 1936. The increase was due largely, however, to the devaluation of the franc. Imports are principally foodstuffs, tobacco, lumber, and textiles, of which France supplied 68·7 per cent in 1937. The chief exports are sugar, rum, and bananas, of which over 99 per cent went to France in 1937. Approximately 45,000 acres of sugar cane is cultivated. There are sugar-refining mills, capitalized at 50 million francs, and two rum distilleries. The monetary unit is the French franc. Martinique has over 100 primary schools and several secondary and technical schools, with an enrolment of 12,000. Fort-de-France is France's West Indian naval base and military headquarters. (L. W. BE.)

MATERNITY WELFARE CENTRES: *see* CHILD WELFARE.

MATHEMATICS. One of the most significant results obtained in mathematical research during 1938 was contained in a short note by K Godel of Notre Dame university in the United States but formerly of the University of Vienna, published in the *Proc. Nat Acad Sci.*, U S.A., vol. 24, pp. 556–57. Two sets of elements A and B are said to have the same power if there exists one to one correspondence between the elements of A and B. If, however, there is a one to one correspondence between A and a part of B but not conversely, then B is said to have a greater power than A. It can be easily shown that the sets of all integers and of all rationals have the same power, but the set of all real numbers is of a power greater than that of all integers. One of the most vexing problems in mathematics was to prove the existence or non-existence of a set whose power is larger than that of the set of all integers but smaller than that of all reals (" problem of the continuum "). The assumption that such a set cannot exist is called the " hypothesis of the continuum ". No essential progress was made in this problem since the hypothesis of the continuum was stated by the creator of the modern set theory, G. Cantor. Godel proved, among other stronger results, that the hypothesis of the continuum does not contradict the usual system of axioms of arithmetic, thus leaving only two possibilities—either that the hypothesis of the continuum can be established on the basis of other axioms of arithmetic, or else that it can be introduced as an independent new axiom (a situation analogous to Euclid's parallel postulate).

Another important progress in 1938 was made in the field of statistical mechanics which was created by Gibbs, and which has numerous applications in various parts of physics, in particular in the theory of gases, and of the turbulent motion of liquids. In a paper published in the *Amer Journ. Math.*, vol. 60, pp. 897–936, N Wiener, of the Massachusetts Institute of Technology, showed that many problems of statistical mechanics can be treated by rigorous mathematical methods. His method is based on an extension of the famous " Ergodic Theorem " first established by G. D. Birkhoff of Harvard university (*Proc. Nat. Acad. Sci.*, U.S.A., vol. 17, 1931, pp. 656–60).

The following five important mathematical conferences were held during 1938. The Symposium of Algebra of Geometry and related subjects, Feb. 11–12, at the Notre Dame university; the St. Andrews Mathematical Colloquium (James Gregory Tercentenary), July 4–15, at St. Andrews; the Ninth Scandinavian Mathematical Congress, Aug. 23–26, at Helsingfors, Finland; the Fifth International Congress for Applied Mechanics, Sept. 12–16, at Cambridge, Mass.; and finally the Semi-centennial Celebration (Sept. 6–9, New York City) of the American Mathematical Society, the youngest of the eleven mathematical societies that have been in existence for at least fifty years. Two volumes of the semi-centennial publications were issued, one containing scientific addresses, and the other the detailed history of the society.

Several notable mathematical prizes and medals were awarded in 1938. The largest prize was the Malaxa Prize, in Rumania, awarded jointly to J. Léray (a Frenchman) and J. Schauder (a Pole) for their investigations in the theory of partial differential equations and functional analysis. Among others should be mentioned the Bôcher Prize of the American Mathematical Society awarded to J. von Neumann for the best paper on analysis published during 1933–37 in an American journal; the Royal Medal of the Royal Society awarded to R A. Fischer for his contributions to the theory and practice of statistical methods, and the De Morgan Medal of the London Mathematical Society awarded to J. E Littlewood.

Among deaths of outstanding mathematicians one may note that of E. W Brown (b. 1866), the foremost investigator of the lunar theory, and of E. Landau (b. 1877), who exercised a great influence in the development of analytic number theory and theory of functions of a complex variable, not only by his own research, but also by his teaching and books.

BIBLIOGRAPHY. Among the books which appeared during 1938 the most important are. L S. Pontriagin, *Continuous Groups* (Moscow) (in Russian; an English translation was announced for publication by the Princeton University and the Institute for Advanced Study); J A Schouten and D J Struik, *Einfuhrung in die neueren Methoden der Differentialgeometrie*, vol 2 (Groningen); K Reidemeister, *Topologie der Polyeder und kombinatorische Topologie der Komplexe* (Leipzig); F. Thureau-Dangin, *Textes mathématiques Babyloniens* (Leyden). (J. D. T)

MATISSE, HENRI (1869–), French painter, born at Le Cateau (French Flanders); studied law, disliked the work of a lawyer's clerk, returned to Paris and studied art, holding his first public exhibition at the Champs de Mars in 1894. An appreciation of his style and further details of his early career may be found in the *Ency Brit*, vol. 15, p. 92. In 1908 he visited Algiers, in 1910 Munich, Seville in 1911, and in 1913, after a visit to Moscow, he went to Morocco for two years, *Fenêtre à Tanger* and some of his *Odalisques* being works of that period. In 1916 he settled in Nice, visited London in 1920 to design the scenery for Stravinsky's ballet *The Nightingale*, went to Italy, later to Tahiti (in 1930), and has made several journeys to the U.S A., where he painted panels for the Barnes Foundation at Merion (Pa.) entitled *La Joie de Vivre* and *La Danse*. Other panels are: *Harmonie Rouge* (at the Gargoyle Club, London), *La Danse, La Musique* (in Moscow), and *La Danse* (in the Musée de l'Art Moderne, Paris). He has also made lithographic illustrations for a book of Stéphane Mallarmé's poems and for James Joyce's " Ulysses ". His paintings are represented in the Luxembourg Museum and in various European, American, and Japanese galleries. In 1938 an exhibition of his work was held at the Galerie G. Rosenberg in Paris.

MATTER, STRUCTURE OF. Our knowledge of the atomic constitution of matter has recently been extended both as regards the structural properties of material bodies composed of large numbers of atoms and as regards the very foundations of the theory of the elementary particles of which atoms and especially atomic nuclei are built up.

In the first respect, the fertile study of the crystalline structure of inorganic substances has been continued, and in particular experimental and theoretical investigations of the superlattices exhibited by certain alloys have yielded very interesting and promising results.[1] Moreover, research on the peculiar crystalline properties of highly complex organic substances would seem to give support to the so-called " cyclol " theory of proteins, proposed a few years ago by D. Wrinch; according to this theory the molecular edifices of these substances are essentially characterized by the folding of a two-dimensional fabric of carbon and nitrogen atoms into cage structures, to which are appended the various radicals determining the specific properties of the proteins concerned.[2] Quite new problems regarding the structure of the liquid state of matter have further been raised by the remarkable discovery of the so-called supra-fluidity of helium at very low temperatures.

Although this phenomenon, just as the supra-conductivity of metals, so much studied in recent years, is not yet fully understood, it becomes ever clearer that here we have to do with a striking example of the predominating influence of the so-called zero-point motion of the atoms, which directly follows from the fundamental principles of quantum theory [3]

In the field of nuclear physics, a considerable amount of experimental evidence regarding nuclear reactions initiated by collisions or radiation has been accumulating and has been found to fit into the general ideas on the structure of atomic nuclei outlined in the *Ency. Brit. Book of the Year*, 1938. In particular, the new evidence has brought further support to the view that on account of the extreme facility of energy exchange between the closely packed constituents of the nucleus, we have to do, in nuclear reactions, with a step-like process involving an intermediate state of the nucleus in which the energy is distributed among the various degrees of freedom in a way resembling the thermal agitation of a solid or a liquid body The final course of such a reaction therefore depends on the relative probabilities of the different processes by which this energy can be released as radiation or converted into some particular type of motion leading to the disintegration of the intermediate nucleus. The ordinary course of such disintegrations, consisting in the escape of a single nuclear particle, thus claims the concentration of a considerable part of the energy available on some particle at the surface of the nucleus and resembles in this respect the evaporation of a molecule from a liquid drop.[4] Just recently, evidence has been brought forward which indicates the occurrence of other types of disintegration, in which a heavy nucleus is divided into two lighter nuclei, much in the same way as a liquid drop may be split into two droplets as a result of an external disturbance.[5] Such processes evidently claim the conversion of the energy into some particular mode of vibration of the nucleus involving a considerable deformation of the surface, and their further investigation promises most valuable information regarding the mechanism of nuclear excitation.

Apart from such studies of nuclear reactions, a great advance has recently been made as regards our knowledge and understanding of the forces acting between the particles in nuclei. On the one hand, experiments on the scattering of protons accelerated in fields of more than a million volts have led to the important conclusion that the short-range forces between nuclear particles are in the first approximation independent of the charge of these particles. On the other hand, the occurrence of such forces has been brought into a most interesting connexion with the existence of a new kind of particle, the so-called "meson," of a mass intermediate between that of the electron and that of the proton. The possible existence of such particles was already suggested several years ago by H. Yukawa in an attempt to ascribe the short-range nuclear forces to the exchange of lighter particles between the heavy nuclear constituents, and this suggestion has in the last years received most striking confirmation from experiments on cosmic rays. The penetrating power of these rays as well as the observation of particular cloud-chamber tracks produced by them offer in fact convincing evidence on the occurrence of particles of the mass predicted from the range of the nuclear forces.[6] Moreover it is found from analysis of cosmic ray observations that the mesons are not stable, but have a limited life-time of the same order of magnitude as that originally assumed by Yukawa in order to account for the beta-ray decay of nuclei, which on his conception of nuclear forces has to be ascribed to disintegrations of individual mesons released during the exchange processes [7] We are here indeed concerned with the beginning of a new promising stage of the development of the atomic theory of matter

BIBLIOGRAPHY. [1] A survey of these researches is to be found in *Reviews of Modern Physics* (F. Nix and W. Shockley), 10, 1, 1938; [2] See especially D Wrinch and J. Langmuir, *Journal American Chemical Society*, 60, 2247, 1938; [3] J. Satterly, *Reviews of Modern Physics*, 8, 347, 1936; [4] Cf. N Bohr, *Science*, 86, 161, 1937; [5] R. Frisch and L Meitner, *Nature*, 143, 239, 1939; [6] D. Froman and J Stearns, *Reviews of Modern Physics*, 10, 133, 1938; [7] H. Euler and W. Heisenberg, *Ergebnisse der exakten Naturwissenschaften*, 17, 1, 1938 (N. B)

MAUD, queen consort of Norway, was born at Marlborough House, London, on Nov. 26, 1869, and died in London on Nov. 20, 1938. She was the youngest child of King Edward VII and Queen Alexandra. Her full names were Maud Charlotte Mary Victoria, but to her family she was "Harry". In October 1895 she became engaged to Prince Charles, second son of King Frederick VIII of Denmark (then Crown Prince), and the marriage took place in Buckingham Palace on July 22, 1896. At Appleton Hall, Sandringham, where the Prince and Princess made their English home, their only child, Prince Alexander Edward Christian Frederick (now the Crown Prince Olav of Norway), was born on July 2, 1903. Two years later, following the separation of Norway and Sweden, Prince Charles was elected to the throne of Norway, taking the title of Haakon VII, and their Majesties were crowned at Trondhjem on Nov. 18, 1905. Queen Maud's death occurred as a result of heart failure following an operation.

MAUDE, AYLMER, British author, was born on March 28, 1858, and died on Aug. 25, 1938. He was educated at Christ's Hospital and the Lyceum, Moscow, and remained in Russia until 1897. From 1918 to 1919 he was in North Russia as lecturer for the universities' committee of the Y.M C.A. He had a great deal to do with the emigration to Canada of over 7,000 Doukhobors in 1899. Maude's chief fame as a writer rests upon his stories and translations from Tolstoy. Among his publications are *Life of Tolstoy: the First Fifty Years*, 1908, and *Later Years*, 1910; *A Peculiar People: the Doukhobors*, 1905; translations of Tolstoy's works; and the 21-volume centenary edition of Tolstoy's works, completed in 1927. In 1932 Maude was granted a Civil List pension of £100.

MAURITIUS. A British colony in the South Indian Ocean, consisting of the island of Mauritius (lat. 20° S., long. 57° E.) and its dependencies, the island of Rodrigues and three groups known as the Oil Islands; these are scattered at distances of between 250 miles and 1,200 miles from Mauritius. In Sept. 1938 the dockers at Port Louis struck work, demanding higher wages and a shorter working week. Serious disturbances followed, including strikes and incendiarism on sugar estates. The Governor took drastic measures to end the disorder. A state of emergency was proclaimed, some 300 dockers were arrested, the chief agitator being deported to the island of Rodrigues, and other leaders confined to certain areas. Order was restored, and the strike broken within a few days.

Area and Population:

Area: Mauritius, 720 sq. miles; Dependencies, 89 sq. miles.

Population (est. Dec. 31, 1936): Mauritius, 399,878; Dependencies, 11,042; Total, 410,920 (two-thirds Indian).

Chief Town (capital) Port Louis.

Governor. Hon Sir Bede Clifford, K C.M.G
Production 1937 :
Sugar, refined . . . . 308,858 long tons
Aloe fibre . . . . 1,642 ,, ,,
Overseas Trade 1937 :
Imports, total . . . . . Rs 33,121,926
Exports, domestic . . . . Rs 36,081,479
Re-exports . . . Rs 1,007,331
Communications 1937 :
Roads : Mauritius Is , 700 miles of public roads.
Railways : Mauritius Is , 141 miles of main line.
Finance and Banking :
Revenue : (1937–38) Rs. 16,604,988 ; (1938–39 est) Rs 16,666,396.
Expenditure : (1937–38) Rs 16,141,802 , (1938–39 est) Rs. 16,998,844.
Public Debt (Dec. 31, 1937) : Rs. 38,386,600
Notes in circulation (Dec. 31, 1937) : Rs. 9,227,500.
Currency : Mauritius rupee : Rs. 1 = 1s 6d.

MAURÓIS, ANDRÉ (1885–), the adopted name of André Herzog, French author of international repute, of whom an account will be found in the *Ency. Brit.*, vol. 15, p. 109, was born at Elbeuf and educated at Rouen, and is best known to English - speaking peoples as a biographer. Besides Shelley and Disraeli, Byron, Marshal Lyautey, Turgenev, King Edward VII, Voltaire, Dickens, and Chateaubriand—this, possibly his masterpiece, published in 1938—have been among his subjects ; while his other works include *Whatever Gods May Be* (1929), *The Weigher of Souls* (1931), *Poets and Prophets* (1936), and *The Thought-reading Machine* (1938).


Associated Press]
ANDRÉ MAUROIS

Maurois is a Commander of the Legion of Honour and a holder of the British D.C.M. ; for his services to English letters he was made honorary K.B.E. in March 1938 (the C.B.E. having been bestowed some years previously), and in June 1938, he was elected to the French Academy ; he is also a D.Litt of the Universities of Oxford, Edinburgh, and Princeton. He has been twice married, and has two sons and two daughters.

MAXWELL, WILLIAM BABINGTON, British novelist, died on Aug. 4, 1938. His mother was Mary Elizabeth Braddon, authoress of *Lady Audley's Secret.* Maxwell's first novel was *The Countess of Maybury,* published in 1901, and twelve more novels appeared before the War, the last being *The Devil's Garden,* 1913, which was stigmatized by the Libraries' Association as " not suitable for general circulation ". After serving in the World War, Maxwell resumed his career as a novelist with *The Mirror and the Lamp,* 1918, which was followed by some 24 others, among the latest being *Tudor Green,* 1935 ; *The Emotional Journey,* 1936 ; and *Jacob's Ladder,* 1937. In 1938 appeared his autobiography, *Time Gathered.*

MEASLES : *see* INFECTIOUS DISEASES, ACUTE.

MEAT. There was an appreciable increase in the amount of meat entering world trade in 1937, compared with the previous year. Production and consumption of beef was probably greater than the high figure for 1936. World exports of beef were considerably greater, and there was also an increase in those of mutton, lamb, and pig meat Imports of meat into the United Kingdom cost over £90 millions in 1938 compared with £87 millions in 1937 and £78 millions in 1936.

United Kingdom imports of beef again increased in 1937, but showed a slight reduction in 1938, with a larger proportion (29 per cent) of the total coming from Empire sources. But the United Kingdom as a market for world exports declined in relative importance, since larger quantities were taken by most European importing countries. Beef and veal production in Great Britain, which had increased by over half a million cwt. between 1930 and 1936, declined slightly in 1937, but accounted for nearly one-half of the total supplies The *per caput* consumption of beef and veal in the United Kingdom is estimated at 69 lb. as against 70 lb. in 1936. Home produced and imported beef continued to advance in price and all descriptions showed an increase during 1938.

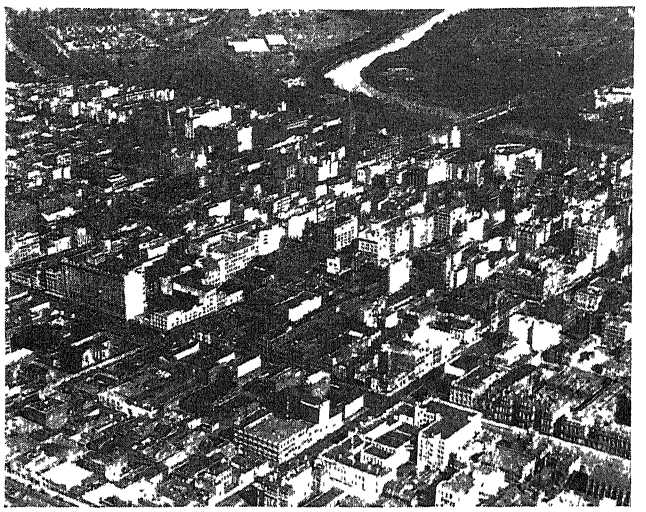
World exports of mutton and lamb increased slightly in 1937 after a five-year period of decline ; imports into the United Kingdom were heavier than in any year since 1932 and this improvement was more than maintained in 1938. Production in Great Britain, which had been declining since 1933, continued to fall. An improvement in prices for home-produced mutton and lamb in the first eight months of 1937 was followed by a marked decline in the late autumn, and this has been continued throughout 1938. Overseas supplies have appreciated in value, with the result that towards the end of the current year prices of the home-produced article were in some cases lower than the best imported.

Recovery in world trade in pig meat in 1936 has been continued with increased exports of bacon and hams, but there was a slight decline in exports of pork. The output of pig meat in the United Kingdom fell below the record of the previous year, but there was only a very slight decline in the apparent *per caput* consumption. United Kingdom imports were a little lighter in 1938, but were valued at more money. Prices for both bacon and pork in the United Kingdom were appreciably higher than in 1936, and after a further advance in those for bacon in 1938, there was a fall to below the figures for 1937.

It is estimated that the cattle population of the world is in the region of 600 million, of which about two-fifths are in the British Empire ; sheep about 750 million, with between one-third and two-fifths in the British Empire ; pigs 250 million, of which about five per cent are in Empire countries. (C. A. Mo.)

MEDICINE AND SURGERY. For information on these subjects, *see* ALIMENTARY SYSTEM, DISORDERS OF ; ANÆMIA ; ANÆSTHETICS ; CANCER ; CHEMOTHERAPY ; DENTISTRY ; DIETETICS ; EAR, NOSE, AND THROAT, DISEASES OF ; ENDOCRINOLOGY ; EPIDEMIOLOGY ; EYE, DISEASES OF ; GYNÆCOLOGY AND OBSTETRICS ; HEART AND HEART DISEASES ; HOSPITALS ; INDUSTRIAL HYGIENE ; INFECTIOUS DISEASES, ACUTE ; MENTAL DISEASES ; NERVOUS DISEASES ; ORTHOPÆDICS AND FRACTURES ; OSTEOPATHY ; PUBLIC HEALTH SERVICES ; RADIOLOGY ; RHEUMATIC DISEASES ; SKIN DISEASES ; TROPICAL DISEASES ; TUBERCULOSIS ; UROLOGY ; VENEREAL DISEASES.

MELBOURNE. In the Victorian parliament in 1938 a bill was introduced to modernize the government of the City of Melbourne, which, in its existing form, was based on the New South Wales Corporation Act of 1842. The main provisions of the bill included the widening of the franchise and abolition of indirect election of aldermen.



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MELBOURNE FROM THE AIR

Melbourne continued to enjoy a building boom in 1938, and retail trade remained at a high level. The building of a new Royal Melbourne Hospital was begun, to be spread over three years, and to cost £800,000. The Victorian government made available £500,000 for housing and slum-clearance, mostly in the metropolitan area.

MEMEL. The cry for "Ein Reich, ein Volk, ein Führer" was heard throughout the year. In February and May, the Lithuanian government released the Memel Germans convicted of treason in 1935; but a new crisis occurred in October. Lithuania conceded a twelve-year-old demand of the Memellanders, and abolished martial law in Memel as from Nov. 1, but was forced, by the opposition of the Memel Diet, to withdraw certain proposed precautionary measures and substitute a more innocuous Defence Precautions Bill. Reports that Germany was trying to secure a status in Memel similar to that in Danzig were strenuously denied in Berlin. On Dec. 11, elections for the Memel Diet were held. As a result of these elections, in which a record poll of 96 per cent was taken, the number of Nazi deputies was increased from 24 to 25 out of a total of 29. Since October, Dr. Neumann has led a "Back to the Reich" movement, and, although the Lithuanian authorities made a final attempt at appeasement on Dec. 8 by appointing a native Memellander as governor of Memel, the year closed with a feeling of certainty that Memel would soon go back to Germany. (S. H. R.)

MENINGITIS: *see* INFECTIOUS DISEASES, ACUTE.

MENTAL DISEASES. Psychiatric progress must necessarily be somewhat slow, for the results in any new therapeutic approach require much time for proof of valid remedial success. Research work has been increasingly in evidence. The most startling advance in recent years, the treatment of general paralysis of the insane and neurosyphilis by the artificial induction of malarial pyrexia, has continued to give highly encouraging results. Many authorities are now advocating that such fever therapy should be used as a prophylactic measure against such disorders and perhaps even replace all chemotherapy in early syphilis. More and more sensitive reactions in the examination of the cerebrospinal fluid for indications of syphilitic infection of the nervous system have come to be employed.

The treatment of mental disease by the production of prolonged narcosis has continued to be the subject of further experimental study. The use of somnifaine for this purpose has been regarded by many as not free from danger, and good results have been obtained through the administration of such barbitone drugs as medinal and luminal over a prolonged period Narcosis has been thus continued for as long as 78 days. Good reports in manic and melancholic conditions have been recorded, but cases of dementia præcox were not found to respond favourably.

Since the prognosis in dementia præcox or schizophrenia is so malignant, shock treatment of various kinds—endocrine, pyretic, and chemical—has been attempted for some years with varying success. Of late, two special methods of shock therapy have been empirically experimented with. One is through the artificial production of hypoglycemia by injections of insulin. Those observers who regard dementia præcox as involving hypofunction of the sympathetic system, think this treatment rational, and believe that the beneficial effect is based on the development of a reduced rate of oxidation in the brain and subsequent stimulation of the sympathetic system. The second new method of shock therapy arose from the theory that an antagonism existed between epileptiform convulsions and schizophrenia. Cardiazol—a synthetic drug originally produced as a circulatory and respiratory stimulant—is given until convulsions ensue. It is thought that a sudden vaso-constriction may be the basis of the beneficial effects. Another drug, triazol, which is only remotely chemically related to cardiazol, has been used similarly as a convulsant, and has been said to have certain advantages.

Some of the resulting improvements in cases of schizophrenia have been almost dramatic, but it remains very doubtful whether or no such effects will persist for long. It has been noted that certain forms of this disorder react much more favourably than others, and also only cases in the early phase of the disease are likely to be benefited. Some authorities are of opinion that these measures have no profound effect on its course, but that they may hasten recovery in cases which are naturally tending towards a remission and prevent its worst ravages in others. There are also those who believe in combining both these methods, *i.e.* giving cardiazol to produce convulsions during a condition of hypoglycemia. By this means greater benefits are thought possible of attainment.

In the present state of our knowledge it is not by any means easy to determine beforehand which cases are likely to be sure of favourable response. Even when no radical improvement takes place, it has been noted that nevertheless there has resulted a diminution of over-excitement generally, and that the need for sedation has approached vanishing point. This shock treatment has not been free from danger, but in skilled hands the risk would seem to be negligible. The severity and bad outlook of this mental disorder make us welcome any possible avenue of betterment. (J. G. P. P)

METALLURGY. Among the more important general features that have occupied the attention of metallurgists during 1938 are age hardening, recrystallization and grain growth, impact testing, spectroscopy, die casting, and powder metallurgy. An interesting new technical development is the use of an "electric ear" to maintain uniform feed in grinding mills, a microphone pick-up serving through a control panel to keep the particular sound level in the mill which experience has shown accompanies the maximum efficiency of operation.

Cadmium. Continued high demand for cadmium for motor bearings has led to efforts to increase the recovery of the metal in retort zinc smelters.

Copper. Progress in 1938 seems to have centred largely upon increasing the capacity of the reverberatory smelting furnaces, with resulting capacities up to 1,000–1,500 tons per day, accompanied by improved waste-heat recovery A recent development that promises well for the future is a process for the direct production of sheets, strip, and rod from molten metal. Oxygen-free copper for withstanding severe working in fabrication and for high-quality welds, continues to make good progress. Considerable construction work has been done during the year, both new and remodelling.

Gold. The continued high price of gold not only maintained a high production level, but made possible still further extensions in the working of low-grade ores Roasting refractory ores or concentrates has improved gold extraction by cyanidation. An important development in cyanidation is the application of pH control for maintaining the optimum degree of alkalinity for minimum cyanide consumption.

Iron and Steel. Of the many recent developments in iron and steel metallurgy, one of the most striking is the local application of the oxyacetylene flame for the purpose of hardening or annealing a restricted portion of the piece, instead of heating it throughout. In this way, massive pieces may be treated in desired spots, or on the surface only, with many advantages. Another new application of the flame is for the cutting away of surface flaws in ingots or blooms, replacing the much slower chipping tool. A novel proposal for the production of stainless steels is their direct synthesis by the reduction of a properly compounded mixture of the oxides of the metals concerned.

Lead. One of the most interesting of the new features in lead metallurgy is the blast furnace at Port Pirie, Australia, with two rows of tuyeres; this furnace has made exceptionally high tonnage records on a charge so high in zinc that ordinary furnace operation was very slow and difficult. A new lead alloy hardened with calcium, magnesium, and tin, is advocated for cable sheathing, sheet, and pipe, on account of its high strength and low creep ratio. The use of lead in free-cutting steel screw stock is a new development of interest to lead producers, though the prospective tonnage of lead required is small, as the amount used in the steel is only 0·2 per cent.

Silver. Work is still being continued in the United States on the development of new commercial uses for silver, and in Britain extensive work has been done on the tarnishing of silver and silver alloys, and its prevention. Considerable progress is being made in the use of silver in the protection of base metal process equipment in the chemical industry.

Tin. New developments in the metallurgy of tin include alloys with silver and nickel, and tin additions to nickel-copper alloys which render the alloy subject to precipitation hardening. "Stannizing" is the term applied to the coating of other metals with tin from the vapour phase, corresponding to sherardizing with zinc; the new process is showing some advantages over other methods of coating, especially dipping.

Titanium. Processes for the production of metallic titanium of high purity have been sufficiently successful to make promising the possibility of developing new uses for the metal. The use of titanium in alloying with steel continues to grow.

Tungsten. A new alloy of tungsten, containing four per cent copper and six per cent nickel, is advocated as a container for radium, instead of the lead capsules formerly used, as well as other applications where high density is a determining factor.

Zinc. The chief features of 1938 in the metallurgy of zinc are: increased output and recovery from retort smelting largely through attention to the character and sizing of the charge; further increase in purity of the product by electrolytic producers; progress in the improvement of the output and efficiency of vertical retorts; continued increase in popularity of the Waelz process. Increases in plant capacity have been made during the year in all of these branches of the industry. The electro-galvanizing of wire has become firmly established, and investigation is under way as to the possibilities of extension of the process to sheets (G. A. Ro.)

METAXAS, JOHN (1871–), Greek general and politician; born in Ithaca, he left the Evelpides military school as a lieutenant in 1890 and joined the general staff during the Greco-Turkish war of 1897. He studied at the War Academy in Berlin from 1899 until 1903, and a few years later was appointed aide-de-camp to the minister of war (M. Venizelos). He negotiated the first military agreement with Serbia in 1913, was appointed chief of the general staff, but resigned over the question of Greek participation in the Dardanelles expedition. He reassumed that office in 1915, was promoted colonel, but resigned again in 1916. Expatriated by the Allies, he returned to Greece in 1920, was placed on the retired list as brigadier-general, devoted himself to politics and founded the Free Opinions party. In 1923, accused of complicity in a counter-revolutionary movement, he was again obliged to leave the country, returned the following year, and was minister of communications from 1926 till 1928. In 1932, he was elected deputy for Cephalonia, held office as minister of state, headed the Union Royaliste party, and in 1936, shortly after the restoration of the monarchy, became minister of war and then prime minister. In Jan. 1938 he instituted a virtual dictatorship, abolished all political parties, banished the leaders of the opposition, and suppressed an uprising in Crete in July. A ten-year treaty with Turkey was concluded in April, and General Metaxas, on behalf of the Balkan Entente, signed the Thessaloniki Pact on July 31. An omnivorous reader and noted for his erudition, General Metaxas is said to possess one of the finest private libraries in Europe.

METEOROLOGY. The following values are to be regarded as provisional, and subject to slight corrections. Blanks in the table indicate that the corresponding data are not yet available.

General Notes on the Weather of 1938. The year 1938 was distinguished by extremes of weather in many parts of the world, frost, snow, floods, and gales coming sometimes in quick succession. January opened with severe frost in central and southern Europe, followed by heavy rain, which brought floods in many places in the middle of the month. February brought floods, gales, or blizzards in many parts of the United States. On March 9, Hong Kong suffered the first hailstorm on record. A tornado did extensive damage in the Dacca district of Bengal on March 15, as did one in the western United States on the 30th. Europe was covered by a cold wave from the 10th until the end of April, while snow, blizzards, and cloud-bursts in the United States were followed by high temperatures at the end of the month. Johannesburg experienced the wettest April on record, 2·95 in. of rain falling on the 3rd. Parts of central and southern Europe suffered intense cold at the end of May, followed in mid-June by very heavy rain and floods, while

Monthly Rainfall in Inches for 1938

	Jan.	Feb.	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec.
London	2 2	0 3	0 3	0 1	1·3	0 4	1 2	2 8	2 0	2 0	2 8	3 5
Edinburgh	3 3	0·6	0 6	0·2	4·2	2 9	2 4	1 2	2 2	4 5	4 5	1 6
Paris	2 6	0·6	0 4	0 4	1·3	0 4	3 4	2 7	2 5	1·7	3 5	1 6
Berlin	3·6	0·8	1 6	1 2	2 4	0 8	2 0	3·2	2 0	2 8	1·2	1 2
Stockholm	2·0	0·8	0 8	0 8	1 2	2 4	2 4	3 9	1·2	2·4	1 6	1·0
Oslo	0·2	0 8	0 0	0 4	0 1	0·3	0 3	2 8	4·8	5 2	3 6	4 7
Copenhagen	1·6	0·4	1 2	1 2	2 4	2 0	2·4	1·6	0 8	2 0	1·8	1 2
Utrecht	4·4	1 2	1·2	1 6	1 2	1·2	3 6	4·4	2 4	4·8	3 2	2·4
Vienna	2·4	0 8	2 4	2·0	1 2	1·2	2 4	9 6	3 2	2 4	1 6	1·2
Lisbon	1·6	2·3	1 2	1·9	4 2	0·1	0·0	0·0	2·8	0·5	1 8	—
Rome	0·8	1·6	0 4	1 2	2 8	0·0	—	1·2	0 8	0·4	2 8	4 3
Leningrad	1 2	0·4	1 2	—	1 6	—	—	—	—	—	—	—
Moscow	1·2	0·8	1 6	1 2	1 6	—	—	—	—	—	—	—
Calcutta	0·4	1·1	0 5	0 0	14 5	9 2	6 1	9 6	2·2	3·8	0·1	0 0
Bombay	0·0	0·0	0 0	0 0	1·3	31 2	16 1	16·8	10 4	0 0	1·2	0·0
Baghdad	2·8	1·5	2 8	0 2	0 0	0 0	0·0	0·0	0·0	0 0	8·7	—
Rangoon	0·0	0·0	0 0	5 2	16·9	15·5	21·7	24 0	16 1	15 2	9 8	0·3
Singapore	12·3	4 7	7·6	8·8	9 6	6 0	6 2	9·4	6·3	6·3	6·4	10 6
Capetown	1·0	0 3	0·7	3 1	4 8	2 0	2·7	2·8	3·4	2·4	0·9	1 2
Johannesburg	5·2	3·3	1·8	5·3	0·4	0·2	0 2	0 4	0 8	2·8	1 0	9 3
Salisbury (Rhodesia)	12·2	1·8	3 4	1·3	0 0	0 1	0 0	0 0	0·0	0·7	3·4	—
New York	3·5	2·4	2 4	3 0	3·5	7 5	6·3	2 0	8·7	1 6	2 8	2·4
Chicago	2 0	2 0	3·5	2 2	3 9	6 7	3·9	2·0	5 1	0·8	1 0	1·2
San Francisco	2·8	8·7	5·5	1·5	0 3	0 0	0·3	0·0	1·6	1 2	0·9	1·6
Quebec	3 6	2·3	3 3	3·4	3·4	2·7	5·3	11·9	5·1	2·0	3·8	5·2
Toronto	1·6	3·6	1 6	1 8	2·2	1·5	2·6	2·9	4 0	1 0	1·5	2·4
Winnipeg	1·4	1·7	0·5	1 1	1 6	1 3	4·1	1·4	0 2	0·4	0·9	1·2
Victoria, B.C.	2·5	1·8	2·6	1·9	0·5	0 3	0·4	0·5	1·6	2·6	9·5	4·3
Sydney	9·4	3·6	1·3	2 4	3·8	0·5	2·9	8·3	1 9	2 9	1·7	—
Melbourne	1·5	1·9	1·2	1·1	0 8	4 0	2 2	1·0	0·8	1·2	1·5	—
Perth	0·2	0·1	1 8	1·9	1·8	5·5	5·4	5·5	3 7	1·8	1·8	—
Wellington, N Z.	5·2	6·3	1 0	7·1	0·9	7·5	4·7	7·2	7·0	3·3	2·0	—

Monthly Mean Temperatures in °F for 1938

	Jan	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
London	43·6	41·7	49·3	46 4	52·5	61·3	62·5	63·9	58·8	51·3	49·9	40 3
Edinburgh	40·7	40·7	47·7	46·1	49·0	54 8	57·5	57·2	55·7	49·2	46·3	39·2
Paris	41·4	40·1	49 8	46·9	54·7	64 4	64 8	66 4	61·3	52·0	50 2	36 3
Berlin	35·4	35·8	47·1	43·9	55·4	63·9	67·3	68·7	59·9	50·5	46·8	30·0
Stockholm	30·2	33·6	39·6	40 5	49·6	58 5	64 4	65·3	56·7	47·1	41·7	31 8
Oslo	26·6	30·4	39·2	41 9	48·6	55 8	61·7	63·3	54·9	44·6	38·5	28·4
Copenhagen	35 8	35·6	43·9	44·4	51·6	58·6	63·3	65·8	59·0	50·5	46 6	34·3
Utrecht	39 2	38·1	45·9	44·4	52 0	59 7	61·0	64·2	59 0	49·1	47·5	32·7
Vienna	33·8	35·2	48·2	44 2	55·2	55·8	67·3	66·6	57·7	57·7	44·2	29·1
Lisbon	50·5	51·6	58·1	60·8	61·3	68·4	69·1	70·3	65·1	64·2	60·1	—
Rome	43·2	43·7	49·5	50·5	58·1	63 5	—	72·3	67 3	61·9	55·4	47 3
Leningrad	19 9	25·5	32·9	—	49 5	—	—	—	—	—	—	—
Moscow	16·0	21·0	30·6	38·8	54·0	—	—	—	—	—	—	—
Calcutta	69·9	70 0	84·9	89·3	85 1	84 9	84·6	84 0	85 6	83·1	73·9	67·3
Bombay	74·4	74·7	80·2	84·5	86·4	81·6	80 8	81·0	80·6	79·1	78·1	78·4
Baghdad	50·9	51·0	54·6	70 5	78·2	88 6	95·5	94·5	—	74 1	62·5	—
Rangoon	79·2	81·2	83·7	84·3	82·3	80·9	80·3	80·1	81·5	—	81·1	79 9
Singapore	79·5	81·7	80·3	81·2	81·1	82·4	81·4	80·2	80·9	80·7	80·2	79·9
Capetown	70·0	69·7	68·9	63·7	60·1	59·2	57·4	55·6	57·8	61·1	64·6	67·4
Johannesburg	67·3	65·1	66·4	61·3	57·2	51·9	51 0	53·9	58·9	63·1	65·1	64 9
Salisbury (Rhodesia)	69 4	69·3	66·9	67·5	61·9	56·5	56·6	59 9	65·8	71·7	69 0	—
New York	32·0	35·6	44·2	53·4	59·4	69·0	75 1	76·3	64·9	58·6	48·6	37·2
Chicago	25·4	34·6	29·9	50·2	58·3	67·6	73·8	75·0	65·0	58·8	44·9	29·2
San Francisco	51·4	53·0	52·8	54·9	56·6	57·5	58·8	60·1	61·2	61·6	57·3	53·7
Quebec	11·8	13·8	24·0	40·5	51·4	65·4	68·0	65·3	55·1	48·2	35·1	23·1
Toronto	22·3	27·2	35·8	46·2	55·2	65 8	71·8	72·8	58·9	52·2	41·2	31·2
Winnipeg	−1 0	5·1	28·2	37·8	51·8	62·2	68·4	67·8	59 0	48·8	19 4	11·2
Victoria, B.C.	40·8	41·7	44·4	50·1	53·6	57 9	60·1	59·1	59·0	51·8	43·6	42·5
Sydney	72·3	72·0	71·3	67·0	61·3	55·2	52·8	54·8	59·2	65·1	69·4	—
Melbourne	68·1	68·3	65·7	62·7	56·5	50·2	48·9	50·7	54·5	59 9	64·1	—
Perth	73·0	72·2	70·3	65·7	61·1	56·1	56·2	57·1	60 9	61·3	66·7	—
Wellington, N.Z.	62·9	65·3	63 9	59 9	54·4	48·5	45·1	47 8	50·4	54 4	57·4	—

the early weeks of August brought severe thunderstorms. The early breaking of the monsoon brought heavy rain in India and in China, the Yellow River and the Yangtze flooding and causing great loss of life and property. In North America the heat and drought at the beginning of August were followed by hailstorms, which were particularly severe over the prairies of Canada. In India the monsoon rainfall was heavy in August, but light in September. The Nile flood was unusually high in August and September, the floods destroying large areas of cotton.

The remainder of the year was a sequence of extremes of

	Total Rainfall in Inches	Total Sunshine in Hours
London	18 9	1,460
Edinburgh	28·2	1,377
Paris	21 1	1,641 (Jan–Nov)
Berlin	22·8	1,856
New York	46·1	2,351 (Jan–Oct)

weather in places, gales, floods, severe frost, or snow being reported from different localities

In Australia, the January rainfall was above normal except in the Northern Territory and Queensland. The drought in early April was followed by heavy rain and violent storms Valuable rains in October were reported to have saved the crops in South Australia, but drought continued in Victoria, and in November it was reported that many wheat crops had failed entirely, while all were poor Wellington, New Zealand, had the warmest and driest May on record (D Bru)

METHODIST CHURCH, THE. On May 24, 1938, meetings were held in Methodist Churches throughout the world to celebrate the two hundredth anniversary of the "evangelical conversion" of John Wesley, the illumination which came to him when he went "very unwillingly to a society in Aldersgate Street", and felt his heart "strangely warmed". Among the most notable of these celebrations were those in Wesley's Chapel, City Road, London, where representatives were present from many branches of world-wide Methodism; in York Minster, where the archbishop preached; and in St. Paul's Cathedral, where the archbishop of Canterbury preached. Many other Anglican cathedrals held services of commemoration. Among the innumerable books issued, the chief were those of J. E. Rattenbury, *The Conversion of the Wesleys*; J. W. Bready, *England, Before and After Wesley*; and J. H. Whiteley, *Wesley's England*. The celebrations were planned to prepare the way for a more definite movement of evangelism which should bring results even greater than that of the eighteenth century.

The Annual Conference of the Methodist Church met in Hull for a fortnight in July under the presidency of the Rev W. L. Wardle, D.D., principal of Hartley-Victoria College, Manchester. The report of the National Children's Home and Orphanage showed that £198,799 was raised in the year for this work. The sums spent on the work of the London Mission and Extension Fund (£125,585) and on Home Missions (over £100,000) do not include the sums raised for the central missions, in London, and in most of the chief cities of Great Britain.

New methods are being tried in evangelism. The ministers set apart to assist the various forms which the Group Movement takes in Methodism, and the "trekkers" or wandering lay evangelists from Cliff College, both met with encouraging success. The energies of British Methodism have for some time been directed to the consolidation of the Methodist Union effected in 1932. But an increasing number of ministers proved their deepening interest in the wider issues raised by the World Conferences on Life and Work (Oxford), and on Faith and Order (Edinburgh), held in 1937. The Methodist Conference unanimously endorsed the proposal, which came from those World Conferences, to form a World Council of Churches.

The total number of full members of the Methodist Church in March 1938 was reported to the Hull Conference as 804,932 (net decrease 3,564), with 19,221 "on trial", and 75,236 junior members. The number of lay preachers is 32,821. There are 1,004,800 scholars in the Sunday Schools, but this figure represents a decrease of 49,375 The serious decline in the number of scholars during the last six years caused the Conference to set up a special commission of inquiry. Meantime the leaders of the Sunday School department planned a campaign, which was inaugurated in October at a series of meetings in Kingsway Hall, London, and carried throughout the country.

Overseas Missions. The report, issued in June 1938, shows an adult baptized Christian community of 219,665 recognized as full members of the Church, an increase of 7,316 on the year There are in addition 132,164 baptized adherents, and 37,906 on trial for full membership, and 212,975 children in the Sunday Schools. The total Christian community under the care of the Methodist Missionary Society, in the West Indies, Ceylon, India, Burma, China, Africa, and Latin Europe, is 722,960. All these figures show great increases, even if the Home Church has nothing comparable to report The Missionary Society is without a debt. The total income raised for its work by the Home Church was £323,886, and by the Churches on the mission fields, £126,109. The total income of the Missionary Society was £513,703, to which must be added nearly £90,000 spent on women's work overseas. The work in China is advancing in spite of war, and although the Methodists are at one with their fellow-countrymen in their determination to resist Japanese aggression, all the districts report a remarkable absence of bitterness on the part of Christians, and a resolve to keep in fellowship with Christians in Japan. The chief increases are in West Africa, and especially in the Trichinopoly and Hyderabad districts of India, where caste Hindu inquirers grow in number, and the outcaste movement continues. (R. N. F.)

United States. In 1935, a committee on union, appointed by the Methodist Episcopal, the Methodist Episcopal South, and the Methodist Protestant Churches, presented their plan of union. In 1936, the plan was approved by the General Conference and the Annual Conferences of the Methodist Protestant Church, and by the General Conference and some of the Annual Conferences of the Methodist Episcopal Church. In 1937, the remaining Conferences of the Methodist Episcopal Church, and the Conferences of the Methodist Episcopal Church South, voted their approval. In April 1938, the General Conference of the Church South cast the final vote of approval and the breaches of the early part of last century gave promise of being healed. It was a dramatic moment when leaders of the three churches joined hands, a symbol of the union of these churches. The Uniting Conference, arranged for April 26, 1939, at Kansas City, is to complete the task. This conference was expected to consist of 900 delegates, 100 from the Methodist Protestant and 400 each from the other two churches.

MEXICO, a Federal republic lying between the United States and Central America and bordering the Pacific and Atlantic (Gulf of Mexico); language, Spanish; capital, Mexico City; president, Lázaro Cárdenas; area, 767,168 sq. miles. Population (census, 1930) 16,552,722; (official est. 1935) 18,512,837. Chief cities: Mexico City, 1,029,068; Guadalajara, 184,826; Monterrey, 137,388; Puebla, 122,914; Merida, 110,183.

History. In 1938, developments and conditions in Mexico were influenced largely by the controversy over the petroleum industry, which reached a crisis on March 13 when the government expropriated the oil properties of seventeen British, American, and Dutch companies for non-compliance with Federal decisions following the

labour dispute of 1937 Immediately, Mexico was faced with economic, political, social, and international repercussions. Vigorous government efforts to avert disaster were successful politically and socially, but uncertain economically.

The oil companies had appealed to the Supreme Court against the decision of the board of arbitration to whom their dispute with their workers had been referred Their appeal was rejected, March 1, 1938, and, when they failed to meet their obligations by March 19, President Cárdenas decreed their properties expropriated. The companies continued legal action, but when the year closed they had not regained their former holdings. The properties (valued by the government at $200 millions and by the companies at $450 millions) were taken over by the national petroleum administration on March 18. Diminishing markets, due to pressure from the three countries involved, so reduced production that, even though it had been normal in the 77 days preceding expropriation, the 1938 total was only 84 per cent of that for 1937. Barter agreements with Japan, Sweden, and, especially, Germany and Italy secured for Mexico new oil customers during the year. These were expected to bring production up to pre-expropriation levels in 1939. Various steps were taken by the government toward compensating the former owners of the larger properties within a ten-year period. As the year closed, the transition from private to government control of the industry was largely completed. Politically, there was a gradual strengthening of President Cárdenas's support throughout the year, even in the face of economic ills and strained foreign relations. In March, he emerged stronger than ever from the crisis of the oil properties' expropriation. An official resolution approving his decree was unanimously adopted by the State governors convened on March 22, each State agreeing to co-operate with its funds in compensating the foreign companies. On the following day, popular demonstrations acclaimed the expropriation decree as a declaration of economic independence. This ovation was endorsed by the conservative press and even by the Roman Catholic Church, the first time in 28 years that the clergy had formally supported a Mexican government. On March



Keystone]
PRESIDENT CÁRDENAS (CENTRE) HEARING WORKERS' COMPLAINTS AT THE EL EBANO OILFIELDS, TAMAULIPAS, SINCE EXPROPRIATED



Associated Press]
MEXICAN TROOPS WAITING TO BOARD THE TRAIN (LEFT) FOR SAN LUIS POTOSI TO FIGHT CEDILLIST REBELS

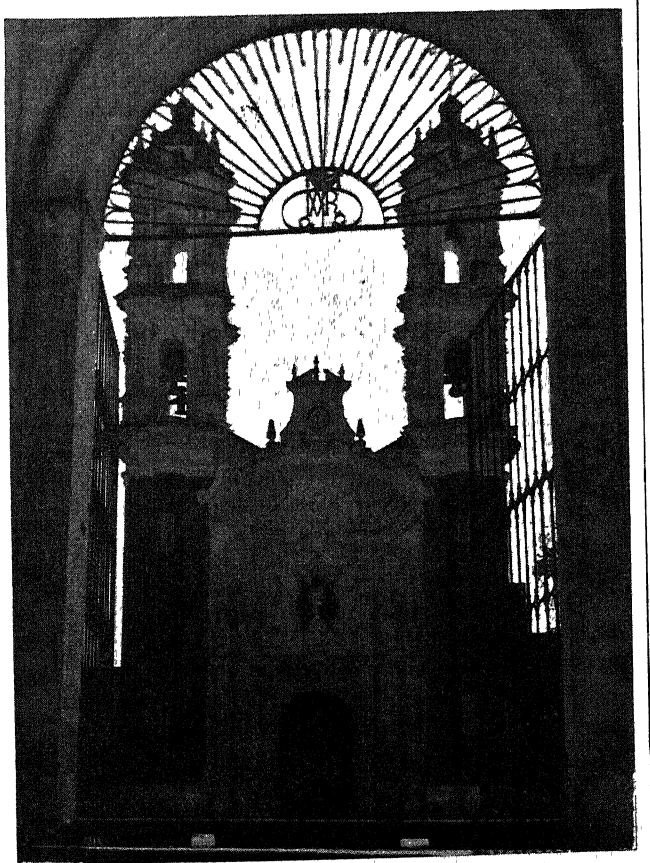
30 Cárdenas inaugurated a new official political organization, the Workers' and Soldiers' Party. This replaced the National Revolutionary Party and gave a preponderance of voice in the government to the military over the labour, agrarian, and merchant classes.

Sporadic outbreaks by dissatisfied elements in the north throughout March and April were intensified when a major revolt occurred in May. General Saturnino Cedillo, long dominant politically in San Luis Potosi State, was attempting to keep his State aloof from the national revolutionary programme. In May, when Cárdenas demanded his submission and the dissolution of his private army, Cedillo openly revolted Cárdenas went in person to the trouble-zone to direct the Federal troops, who won almost every encounter. By June 1, the rebels had surrendered, deserted, or disbanded themselves. Cedillo himself had fled, and was still in hiding as 1938 ended. In July, Cárdenas crushed another movement of the right, when army officials tried to form a controlling conservative faction. The president turned to the left for support, and the conservative movement collapsed. On Sept. 7, after a victory in the chamber of deputies, which enacted his proposal allowing public employees the right to organize and strike, Cárdenas was without organized political opposition; on Oct. 21, another of his measures became effective when the necessary number of States ratified the women's suffrage amendment to the constitution. This gave approximately 4 million women the right to vote in national elections. With four of his six years in office completed, Cárdenas was still the dramatic hero of the Mexican social reformation. He was not, however, without some potential rivals. Vicente Lombardo Toledano, labour leader and extreme leftist, and Ramon Yocupicio, conservative governor of Sonora, who had repeatedly thwarted the presidential land programme in that State, were both being canvassed as his possible successors.

Mexico's economic depression, entering on its second year, reached a new low level in 1938, but the administration's attempt to convert the large Indian agrarian and labour population into a producer-consumer industrial economy was continued. The oil expropriation diminished immediate annual revenue by 65 million pesos, formerly received from direct taxes on foreign holdings. Mexico's vitally important mining industry received a serious setback with curtailment of U.S. silver purchases in March, but boomed

again on a record-breaking scale as more liberal buying was resumed. An export tax imposed in August and an outbreak of labour troubles, however, caused a new decline Almost all phases of the national economy suffered severely from the oil expropriation crisis. The peso fell nearly thirty per cent in value, and prices soared abnormally Strike-won concessions secured higher nominal wages, but were offset by the rising cost of living. Throughout 1938 major strikes, almost all against foreign-owned companies, were prevalent and gained for the workers some of their demands The sugar industry came under more complete government control during 1938 as more mills were nationalized, and the National Union of Credit for Sugar was formed to control refining and to fix prices As the year closed, it appeared that the programme of nationalizing industry would go forward in spite of the crisis.

The government continued to support labour and agrarian movements, to carry socialized education into the remote Indian villages, to expend millions of pesos on irrigation projects in the arid regions, and to promote in general the betterment of the masses. Immigration was restricted by a new law in November, providing that foreigners who have lost their nationality may enter Mexico only by special permission and on condition that they marry Indians and raise mestizo families. Although this law applied to all such aliens, it put an end to the possibility of Mexico's becoming a haven for Jewish refugees. Anti-Semitic agitation continued throughout the year, but without government sanction. In December Archbishop Martinez, primate of Mexico, declared that there was now freedom of worship and that there would be no more religious persecution. This statement was issued shortly after the government had authorized the sending of bishops to the States



A. Costa]
SPANISH BAROQUE CHURCH AT TOPOTZLAN, MEXICO



Keystone]
CAPTURED CEDILLIST REBELS BEING REPRIMANDED AND FREED BY GENERAL FIGUEROA AT CÁRDENAS

of Tabasco and Chiapas, where repressive measures had been severe during the long struggle between Church and State.

In 1938, land division continued at an even greater rate than in 1937. This programme—the *ejido* system—with its roots in pre-Spanish times, is one of common ownership under Federal aid and guidance, and is the keystone of Cárdenas's new socialistic state The most important project, the 500,000-acre Laguna cotton area, experienced another difficult year. Planted acreage for 1938 was estimated at fifteen to twenty per cent less than in 1937. In December the government began dividing the 40,000-acre farm lands of the famous Los Mochis ranch in northern Sinaloa, expropriated from an American-owned sugar company.

Foreign Affairs. The oil expropriations precipitated the most serious issue in 1938. On May 14, Mexico broke off relations with the British government in protest against a critical communication which denounced as "confiscatory" the seizure of British oil and oil lands without immediate compensation. Relations were still severed as 1938 closed. Relations with the United States and with the Netherlands were also strained. On Nov 12, a settlement of the agrarian land controversy between Mexico and the United States was effected, providing for a joint-claims commission and for the deferred payment of claims. The Mexican government continued to support the Loyalist forces in the Spanish civil war.

Education. Urban education is supported by the States, rural education by the national government. In 1936, Mexico maintained 10,199 rural schools with 647,127 enrolments at a cost of 23,696,029 pesos. The 1938 budget provided 65,260,000 pesos for education.

Banking and Finance. The monetary unit is the peso (value: 20·3 cents U.S. in 1938, 27·8 cents in 1937). The budget for 1938, largest in Mexican history, called for 430,920,000 pesos (333,220,089 pesos in 1937), but receipts for the first six months were under the estimate for that period by 33 per cent.

Communications. There are almost 14,810 miles of railways. Construction of 1,002 miles of additional railway in four main projects was continued in 1938 with completion expected by 1941. Highway building during 1938 included the completion of the 159-mile Nogales–Mexico City branch, supplementing the 1,050-mile Nuevo Laredo–Mexico City link in the Pan-American highway. Work on the 900-mile sector from the capital to the border of

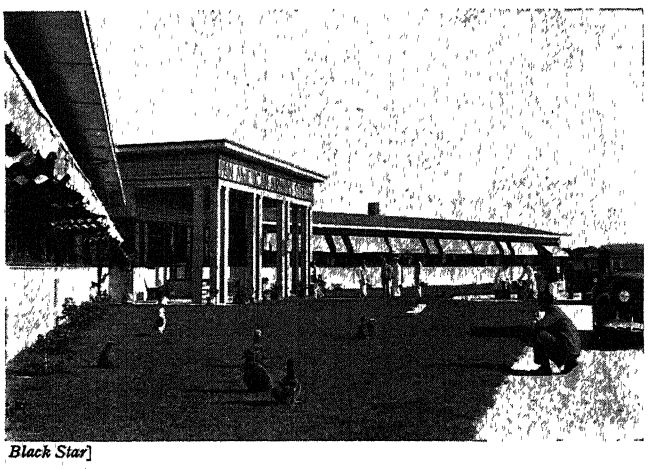
Guatemala was continued, with completion expected by 1941. During the year, twenty million pesos were spent on highway construction. By August there were 23 lines of air passenger service in Mexico (over 12,500 miles), and new lines were being planned by the government.

Trade. In 1937 exports totalled 897,086,050 pesos, of which mineral products, principally petroleum, silver, gold, and lead, constituted 708,698,000 pesos (or 79 per cent). The principal customer is the United States, taking approximately sixty per cent annually, with Great Britain second. In 1937 imports totalled 613,755,000 pesos. In the first five months of 1938, imports had increased 24·4 per cent in peso value The United States usually supplies about sixty per cent of the imports annually, with Germany second. The devaluation of the peso caused an increase in pesos spent and collected but a decrease in goods exchanged. A significant drop in trade with the United States and Great Britain and a corresponding gain in that with Germany and Italy during 1938 was due to Mexico's resort to barter agreements, marked by a $17 millions oil barter in December. Mexico's 1937 oil output was 46,907,396 barrels. For 1938, it was 39,861,000 barrels (est.), a decrease of sixteen per cent. Normally, Mexico is almost agriculturally self-sufficient, but crop failures forced her to import corn, wheat, beans, and other normally export produce in 1938. The cattle industry occupies an important place in the northern States. (L W Be; X)

MICHALAKOPOULOS, ANDREAS, Greek politician, was born at Patras in 1876, and died in Athens on March 27, 1938. From the start of his political career he was a strong supporter of M. Venizelos. He became minister of national economy in 1911, of agriculture in 1916 and throughout the World War, and of finance in 1924. From Oct. 1924 to July 1925 he was prime minister. In 1926 he was foreign minister in the Zaimis cabinet, and also held office under Venizelos from 1928 to 1932 and in the Coalition Government of 1933. In Jan 1938 he was banished to the Isle of Paros under suspicion of subversive activities, but was permitted to return to Athens on account of illness shortly before his death.

MIDWAY ISLANDS, a group of two small islands and several sand islets in lat. 28° 13′ N., and long. 177° 23′ W., 1,149 miles north-west of Honolulu, belonging to the United States of America The largest is Sand island; about 850 acres; maximum height above sea-level, 43 ft. There are no native or permanent inhabitants.

In 1903 the islands were made a naval reservation, and they have been under the jurisdiction of the United States Navy Department since. Sand island is the site of a commercial cable station, and the Navy Department has granted Pan-American Airways permission to establish temporary commercial air-service facilities there in connexion with its trans-Pacific airline operations.



Black Star]
PAN-AMERICAN AIRWAYS LANDING STATION, MIDWAY ISLANDS

MIKLAS, WILHELM (1872–), Austrian politician; born on Oct. 15, 1872, at Krems; educated at Vienna university; became a teacher, later head master of Horn public school, and in 1907 christian-socialist member of parliament. State secretary for education in 1919, president of the national council in 1923, he was elected president of the republic in 1928 (re-elected 1931), and by inviting Dollfuss to form a ministry in 1932 unwittingly ushered a dictatorship into Austria When Dollfuss was murdered by Nazis in 1934, he acquiesced in the arrangement whereby Dr. Schuschnigg took over the government. In Feb 1938, Italian support of Austrian independence having been withdrawn, and under duress from Germany, President Miklas reluctantly signed the Austro-German agreement which gave control of the police to the Austrian Nazi minister of interior, Seyss-Inquart; early in March, following the plebiscite proposal and an angry ultimatum from the German government, President Miklas, yielding to what he described as "brute force", dismissed Schuschnigg and appointed chancellor the German protégé Seyss-Inquart. On March 13, the occupation of Austria by German troops having been completed, President Miklas resigned on the request of Seyss-Inquart.

MILK: *see* Dairy Farming and Dairy Produce; Marketing Boards.

MILLS, BERTRAM WAGSTAFF, British circus proprietor, was born in London on Aug 11, 1873, and died at Chalfont St. Giles, Bucks, on April 16, 1938. His father owned a coach-building business at Paddington, and farms at Harefield, near Rickmansworth, and at Chalfont St. Giles; and Mills was occupied with carriage-building and horse-breeding before the War, during which he served as a captain in the R A.S.C. His first circus was staged at Olympia at Christmas 1920, and this was repeated every year up to 1937. In 1929 Mills started the Bertram Mills Tenting Circus, which toured the country every year from April to October. He was chairman of several committees connected with showmanship, entertainment, and other matters; and was a member of the London County Council, representing East Fulham from 1928 to 1934 and Clapham from 1934 until his death.

MINERAL AND METAL PRICES. The accompanying table shows the range of prices for the leading metals and minerals during the year 1938, as quoted on the New York and London markets. On the whole, prices have been somewhat steadier in New York than in London, and recoveries from the recession beginning in 1937 have been somewhat more pronounced. The E & MJ index of non-ferrous metal prices declined from 103·78 in March 1937 to 93·25 in May, and after slight improvement to August, dropped again to 75·18 in December; after rising to 75·56 in Jan. 1938, it continued to drop to a low of 67·55 in June. The drop during 1938 was much less abrupt than in 1937, and since June has shown steady improvement, to 78·36 in November, followed by a slight decline in December, though the rate of recovery is slow as compared with the decline, but better than the recovery rate during 1936. The average price level for 1938 is almost identical with that of 1936, averaging 73·67, against 73·45 in 1936 and 90·86 in 1937. (G. A. Ro.)

Mineral and Metal Prices in 1938

LONDON MARKET AS REPORTED BY THE "METAL BULLETIN AND MINING MAGAZINE"

	Grade	Units	Open	High	Low	Close	Average
			£ s. d	£ s d	£ s d	£ s d	£ s. d.
Aluminium	98–99%	Long ton	100 0 0	100 0 0	94 0 0	94 0 0	—
Antimony	Domestic, 99%	,,	65 0 0	65 0 0	47 0 0	57 0 0	—
,,	Chinese	,,	64 10 0	67 10 0	47 0 0	52 10 0	—
Arsenic	Foreign	,,	10 10 0	10 10 0	10 10 0	10 10 0	—
Bismuth	—	Pound	4 0	4 3	4 0	4 3	—
Cadmium	—	,,	5 2½	5 2½	—	2 1	—
Chromium, Ore	48%	Long ton	110 0	110 0	80 0	91 3	—
,, Metal	98–99%	Pound	2 5	2 6½	2 5	2 5	—
,, Ferro-alloy	4–6% C	Long ton	24 0 0	—	—	24 0 0	—
Copper	Standard	,,	39 10 0	48 6 10½	32 11 3	44 10 9	40 14 11·97
,,	Electrolytic	,,	43 15 0	54 5 0	37 5 0	50 7 6	45 16 9·95
Gold	Official	Ounce	139 5	149 10½	139 5	149 7½	—
Iron, Ore	50% N. African	Long ton	30 9	30 9	21 6	22 6	—
,, Pig	Basic	,,	5 0 0	—	—	4 12 6	—
Lead, Ore	80% R/C.	,,	24 0	—	—	26 0	—
,, Metal	Foreign	,,	15 3 9	17 12 6	13 3 9	15 5 7½	15 5 3·82
Magnesium	Ingots, sticks	Pound	1 5½	—	—	1 5½	—
Manganese, Ore	50%	Unit	2 0½	2 0½	1 4	1 4½	—
,, Ferro-alloy	—	Long ton	19 0 0	19 0 0	16 15 0	17 0 0	—
Mercury	—	Flask	13 0 6	—	12 10 3	15 4 0	—
Molybdenum, Ore	85–90%	Unit	47 6	47 6	45 0	45 0	—
,, Ferro-alloy	70–75%	Pound	4 9	—	—	5 0	—
Nickel	Refined	,,	182 10 0	182 10 0	182 10 0	182 10 0	—
Palladium	—	Ounce	4 12 6	4 17 6	4 12 6	4 15 0	—
Platinum	—	,,	7 3 9	7 5 0	7 0 0	6 17 6	—
Selenium	—	Pound	7 0	7 3	7 0	7 3	—
Silver	Official	Ounce	19¼	20 7/16	18⅜	20 1/16	19·53
Tellurium	—	Pound	7 0	7 0	7 0	7 0	—
Tin	Standard	,,	181 7 6	217 5 0	153 6 3	216 15 0	189 12 0·95
Tungsten, Ore	65%	Unit	77 6	79 0	38 0	59 0	—
,, ,,	35–40%	,,	58 9	60 0	Nominal	53 0	—
,, Ferro-alloy	80–85%	Pound	Nominal	—	—	4 8	—
Vanadium, Ore	10–12% V_2O_5	Unit	55 0	—	—	Nominal	—
Zinc, Ore	52% R/C.	,,	41 0	—	—	37 6	—
,, Metal	—	Long ton	14 10 7½	15 18 1½	11 18 9	13 7 6	13 19 9·54

NEW YORK MARKET AS REPORTED BY E & MJ METAL AND MINERAL MARKETS

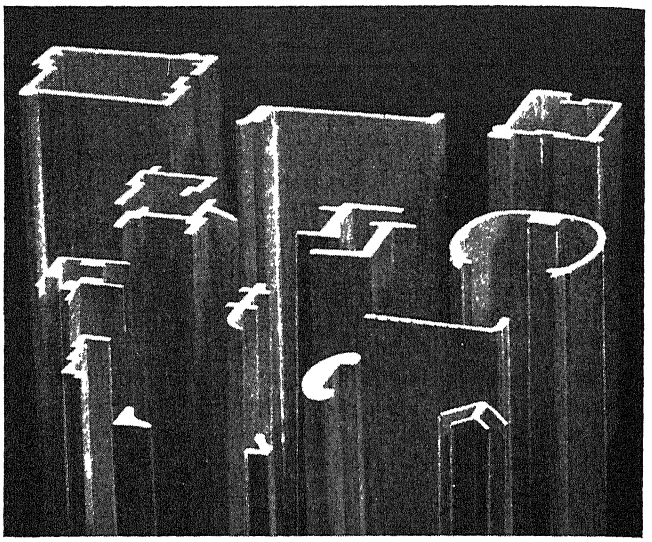
	Grade and Units		Open	High	Low	Close	Average
Aluminium	99%	(a)	20·000	20·000	20·000	20·000	20·000
Antimony	Domestic	(a)	13·750	13·750	10·750	11·750	12·349
,,	Chinese	(a)	17·000	17·000	14·000	14·000	—
Arsenic	—	(a)	3·000	3·000	3·000	3·000	—
Bismuth	—	(b)	1·000	1·050	1·000	1·050	—
Cadmium	—	(a)	117·500	117·500	60·000	60·000	98·037
Chromium, Ore	45–47%	(c)	22·500	25·000	22·500	22·500	—
,, Metal	97%	(a)	85 000	85·000	85·000	85·000	—
,, Ferro-alloy	4–6% C.	(d)	10·500	10·500	10·500	10·500	—
Copper	Domestic	(a)	9·900	11·025	8·775	11·025	10·000
,,	Export	(a)	9·475	10·975	7·850	10·150	9·695
Gold	—	(e)	35·000	35·000	35·000	35·000	35·000
Iron, Ore	Lower Lake ports	(c)	5·100	5·100	5·100	5·100	—
,, Pig	Basic	(c)	23·500	23·500	19·500	20·500	—
Lead, Ore	80%, Joplin, Mo.	(f)	52·930	57·980	42·140	54·380	—
,, Metal	—	(a)	4·750	5·100	4·000	4·850	4·739
Magnesium	99·8%	(a)	30·000	30·000	30·000	30·000	—
Manganese, Ore	50–52%	(g)	45·000	45·000	28·500	30·000	—
,, Ferro-alloy	78–82%	(c)	102·500	102·500	92·500	92·500	—
Mercury	—	(h)	80·500	83·000	70·500	77·500	75·469
Molybdenum, Ore	90%	(i)	42·000	45·000	42·000	45·000	—
,, Ferro-alloy	50–60% Mo.	(d)	95·000	95·000	95·000	95·000	—
Nickel	Cathodes	(a)	35·000	35·000	35·000	35·000	—
Palladium	—	(e)	24·000	24·000	24·000	24 000	—
Platinum	—	(e)	36·000	39·000	33·000	34·000	35·901
Selenium	99·5%	(b)	2·000	2·000	1·750	1·750	—
Silver	—	(j)	44·750	44·750	42·750	42·750	43·225
Tellurium	—	(b)	1·875	1·875	1·750	1·750	—
Tin	Straits	(a)	41·125	46·850	35·125	46·600	42·301
Tungsten, Ore	Domestic	(k)	23·750	23·750	17·000	20·000	—
,, ,,	Chinese	(k)	25·000	25·000	17·500	18·000	—
,, Ferro-alloy	75–80%	(d)	2·000	2·000	1·650	1·650	—
Vanadium, Ore	—	(l)	27·500	27·500	27·500	27·500	—
Zinc, Ore	60%, Joplin, Mo.	(f)	32·000	33·000	27·000	33·000	—
,, Metal	St. Louis	(a)	5·000	5·050	4·000	4·500	4·610

(*a*) Cents per pound. (*b*) Dollars per pound. (*c*) Dollars per long ton, c.i.f. Atlantic ports. (*d*) Cents per pound of primary metal content. (*e*) Dollars per fine ounce. (*f*) Dollars per short ton. (*g*) Cents per long ton unit, c.i.f. Atlantic ports. (*h*) Dollars per flask, 76 pound. (*i*) Cents per pound of contained $Mo.S_2$. (*j*) Cents per fine ounce. (*k*) Dollars per short ton unit. (*l*) Cents per pound of V_2O_5 contained.

MINERAL AND METAL PRODUCTION. The accompanying table gives 1937 mineral and metal production for the more important producing countries. Lack of space prevents making a complete listing, and a country producing a fairly large amount of one or two minerals may have been omitted because there were not sufficient other entries to justify the space required As a result of war conditions, no attempt has been made to include Spain, and most of the Japanese figures are for the preceding year Most of the data are from the reports of the Imperial Institute (London), supplemented in a few cases by information from other sources

The world production rate for minerals improved steadily from 1932 to 1937, somewhat surpassing the pre-depression high of 1929, although there are still some branches of the industry that are lagging behind, notably coal, pig iron, lead, and silver. The trend of world production rose from an aggregate index number of 88 in 1932 (as compared with 87 in 1913, and 136 in 1929) to 145 in 1937. There are still insufficient data available to arrive at any accurate figure for 1938, but preliminary indications seem to point to a recession to about the 1936 level.

Below are given some details (not contained in the tables) concerning output and uses of some of the mineral products of the world. The following are, however, dealt with in separate articles: COAL; COPPER; DIAMONDS; GOLD; IRON AND STEEL; NITRATES; PETROLEUM; PLATINUM; POTASH; PHOSPHATES; PYRITES; RADIUM; SILVER; TIN; and ZINC. *See* also METALLURGY.



Northern Aluminium Co., Ltd.]
ALUMINIUM ALLOY EXTRUDED SECTIONS SUITABLE FOR ARCHITECTURAL PURPOSES

Aluminium. The total production for 1937 (*see* table) was 35 per cent higher than that for 1936, and 1938 is expected to show another increase.

World Mineral and Metal

(Long tons unless otherwise specified; Th. indicates thousands and Mi. millions of units)

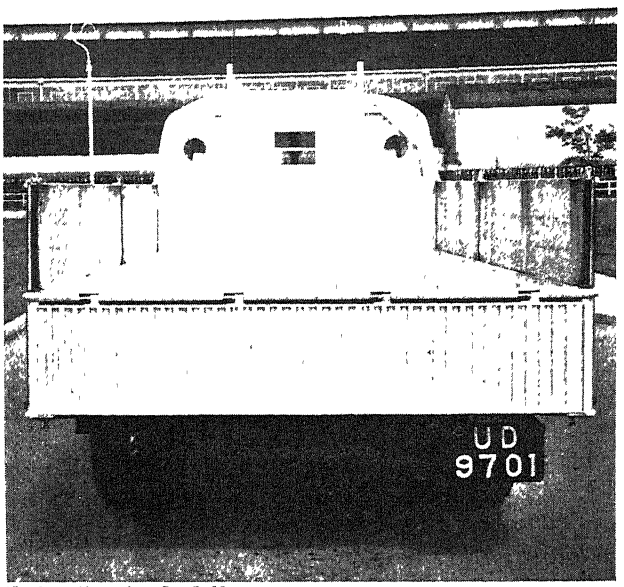
Country	Aluminium (Th.)	Bauxite (Th.)	Antimony (Th.)	Asbestos (Th.)	Cadmium (Th. lb.)	Chromite (Th.)	Coal (Mi.)	Coke (Mi.)	Copper in Ore (Th.)	Copper (Th.)	Diamonds (Th. Carats)	Gold in Ore (Mi. oz.)	Iron Ore (Mi.)	Pig Iron (Mi.)	Steel (Mi.)	Lead in Ore (Th.)	Lead (Th.)
ALGERIA	—	—	1·0	—	—	—	p	p	(0·2)	—	—	—	2·29	—	—	4·0	—
ANGOLA	—	—	—	—	—	—	—	—	—	—	626·4	—	—	—	—	—	—
AUSTRALIA	—	7·8	0·6	0·2	464	0·5	13·6	(1·5)	19·1	17·4	0·2	1·38	1·87	(0·78)	(0·07)	246·0	228·5
AUSTRIA	2·2	3	0·2	—	—	—	3·4	0·6	p	2·0	—	—	1·85	0·38	0·64	8·6	10·1
BELGIAN CONGO	—	—	—	—	—	—	p	—	205	148·2	4,931·4	0·42	p	p	—	4·8	—
BELGIUM	—	—	—	—	598	—	29·2	5·8	—	(57·8)	—	—	(0·19)	3·78	3·81	—	90
BOLIVIA	—	—	7·0	p	—	—	—	—	3·6	—	—	p	—	—	—	17·9	—
BRAZIL	—	8·6	—	—	—	0·8	0·8	—	—	—	239	0·15	0·19	0·10	0·08	—	—
BURMA	—	—	p	—	—	—	—	—	3·7	—	—	p	0·03	—	—	91·2	77·7
CANADA	41·0	—	—	369·6	745	(0·8)	14·1	2·3	236·6	206·7	—	4·10	—	0·98	1·40	183·9	178·3
CHILE	—	—	—	—	—	—	2·0	p	410·0	406·7	—	0·32	1·51	—	—	p	0·5
CHINA	—	—	15·0	—	—	—	(12·0)	—	—	—	—	—	—	—	—	4	—
COLOMBIA	—	—	—	—	—	—	0·3	p	—	—	—	0·44	—	—	—	—	—
CZECHOSLOVAKIA	—	—	1·2	(2·7)	—	—	34·4	3·5	(0·3)	0·6	—	p	1·79	1·65	2·28	5·0	4·7
FRANCE	33·9	677·3	—	0·2	218	—	44·6	9·5	0·6	1·0	—	p	37·25	7·79	7·79	4·6	37·7
GERMANY	125·5	18·0	—	—	783	—	363·7	48	29·0	64·5	—	p	7·70	15·71	19·54	70·0	170·0
GOLD COAST	—	—	—	—	—	—	—	—	—	—	1,597·6	0·56	—	—	—	—	—
GREECE	—	108·0	(0·2)	—	—	55·1	(0·1)	—	p	—	—	—	(0·28)	—	—	(3·5)	5·2
GUIANA, BRIT.	—	366·9	—	—	—	—	—	—	—	—	36·0	0·04	—	—	—	—	—
GUIANA, NETH.	—	386·1	—	—	—	—	—	—	—	—	—	p	—	—	—	—	—
HUNGARY	—	444·4	—	—	—	—	8·8	0·2	(0·1)	—	—	p	0·28	0·35	0·66	—	0·1
INDIA	—	15·2	—	0·1	—	62·3	25·0	(2·7)	11	6·8	1·2	0·33	2·87	1·63	0·90	—	—
INDO-CHINA	—	7·0	p	—	—	—	2·3	—	—	—	—	p	0·03	—	—	—	p
ITALY	22·6	380·4	0·6	(6·0)	44	—	2·0	1·7	0·6	1·4	—	p	1·00	0·86	2·07	34·8	38·9
JAPANESE EMPIRE	10·5	—	(0·2)	1	52	(37·9)	43	(3·0)	94·0	9	—	(1·5)	(1·30)	2·76	5·72	?	15·8
LUXEMBURG	—	—	—	—	—	—	—	—	—	—	—	—	7·64	2·47	2·47	—	—
MALAYA	—	19·0	—	—	—	—	0·6	p	—	—	—	0·03	1·66	—	—	—	—
MANCHUKUO	—	—	—	—	—	—	(15·0)	(0·6)	—	—	—	—	(1·45)	(0·62)	0·34	—	—
MEXICO	—	—	10·5	—	1,366	—	(1·3)	(0·5)	45·4	45	—	0·85	0·13	0·09	(0·13)	204·7	198·0
MOROCCO, FR.	—	—	p	—	—	—	(0·1)	—	—	—	—	p	—	—	—	15·9	—
NETH. E. INDIES	—	195·8	—	—	—	—	1·3	—	—	—	1·0	0·06	—	—	—	—	—
NEW CALEDONIA	—	—	—	—	—	47·3	—	—	—	—	—	—	—	—	—	—	—
NORWAY	23·0	—	—	—	340	0·2	—	p	19·8	8·2	—	p	0·99	0·18	—	p	0·2
PERU	—	—	1·5	—	—	—	p	—	36·0	35·1	—	0·17	—	—	—	38·1	15·5
PHILIPPINES	—	—	—	—	—	75·2	p	—	—	—	—	0·72	0·68	p	—	—	—
POLAND	—	—	—	—	274	—	35·6	2·3	—	—	—	—	0·77	0·71	1·43	10·0	17·3
PORTUGAL	—	—	0·1	—	—	—	0·3	—	5·5	—	—	p	p	—	—	1·3	—
RHODESIA, N.	—	—	—	—	—	—	—	—	245·9	208·2	—	p	p	—	—	3·9	0·6
RHODESIA, S.	—	—	0·1	50·9	—	27·1·3	1·0	p	—	—	p	0·80	—	—	—	p	—
SIAM	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SIERRA LEONE	—	—	—	—	—	0·7	—	—	—	—	913·4	0·04	0·63	—	—	—	—
SOUTH AFRICA	—	—	—	25·6	—	166·0	15·2	0·4	11·2	13·1	1,030·4	11·73	0·45	0·27	0·28	p	—
SOUTH-WEST AFRICA	—	—	—	—	305	—	—	—	11·6	—	196·8	p	p	—	—	10·1	1·4
SWEDEN	1·8	—	—	—	?	—	0·5	(0·5)	7·1	9·9	—	0·19	14·72	0·68	1·09	9·1	—
TUNIS	—	—	—	—	—	—	—	p	—	—	—	—	0·93	—	—	12·9	24·4
TURKEY	—	—	0·7	0·2	—	189·5	2·4	p	0·4	—	—	—	—	—	—	7·6	—
UNITED KINGDOM	19·0	—	—	—	274	0·3	240·4	29·1	p	7·4	—	p	14·21	8·49	12·98	26·4	10·2
UNITED STATES	130·7	420·2	1·1	12·4	4,824	2·3	442·1	46·8	748·0	807·4	—	4·12	73·43	37·13	50·57	415·2	416·5
U.S.S.R.	60·0	250	—	(123·1)	(250)	(216·0)	120·6	(19·6)	90·0	90·0	—	5·00	(27·48)	14·29	17·15	?	55
VENEZUELA	—	—	—	(0·1)	—	—	p	—	—	—	—	0·12	—	—	—	—	—
YUGOSLAVIA	0·2	352·2	3·9	—	—	58·9	5·0	p	44·0	38·8	—	0·09	0·61	0·04	—	70·0	4·0
WORLD TOTAL	495·0	3,660·0	43·7	625	10,290	1,350	1,510·0	188·7	2,300·0	2,290·0	9,610·0	34·60	214·00	101·60	132·50	1,650·0	1,650·0

Notes.—A figure in parentheses is for the preceding year, 1937 data not being available. A figure without decimals is an estimate, except with cadmium and mercury. The letter "p" indicates a production unknown or smaller than the minimum base of the table.

New uses continue to expand, most of which depend on the lightness, strength, and corrosion resistance of the metal or its alloys, and electrical transmission lines now use more aluminium cable than ever before.

Antimony. During recent years China has supplied about 70 per cent of the demand, Mexico 10 per cent, and Bolivia 7 per cent, the remaining 13 per cent being scattered among twenty or more minor producers. The Chinese industry has been somewhat disorganized by the Sino-Japanese conflict, and though smelting operations continued at about the normal rate, shipments during the latter part of 1937 were irregular. Total exports declined 11 per cent in 1937.

Arsenic. The "arsenic" of commerce is the white oxide, and not the metal itself. World production of arsenic for consumption is 50,000–55,000 metric tons, about one-quarter of which is in the United States; Mexico and Sweden each contribute about 20 per cent of the total, and Australia, Belgium, Germany, and Japan each about 5 per cent. Practically the entire output is recovered as a by-product in the treatment of other ores, chiefly copper and gold, almost none is obtained from ores mined solely for their arsenic content. Most of the output is used in the preparation of insecticides and fungicides; some is used in wood preservation, and research is being conducted in connexion with other uses. Small amounts are used in alloys, particularly with lead, in the making of shot.



Northern Aluminium Co., Ltd.]

REAR VIEW OF ALL-ALUMINIUM LORRY SHOWING USE OF CORRUGATED EXTRUDED SECTIONS FOR FLOOR AND TAIL BOARD

Asphalt. More than half of the world supply of native asphalt comes from the famous asphalt lake of Trinidad;

Production in 1937

(Long tons unless otherwise specified; Th. indicates thousands and Mi millions of units)

Magnesite[1] (Th.)	Manganese Ore (Th.)	Mercury (Th. lb.)	Nickel (Th.)	Petroleum (Mi)	Phosphate Rock (Mi.)	Platinum (Th. oz)	Potash[2] (Th)	Pyrite (Th.)	Salt (Mi)	Silver in Ore (Mi. oz.)	Sulphur[3] (Th)	Tin in Ore[4] (Th)	Tin (Th)	Tungsten Ore (Th.)	Zinc in Ore (Th.)	Zinc (Th.)	Country
—	—	9	—	—	0·62	—	—	38·1	0 06	0·07	—	—	—	—	8 2	—	. . Algeria
—	—	—	—	—	—	—	—	—	0 03	—	—	—	—	—	—	—	. . Angola
19 7	1·1	1	—	p	p	p	p	40 6	0·13	14·06	—	3 61	2 91	0·48	203·5	69·8	. . Australia
(391·5)	—	p	—	0·03	—	—	—	—	p	p	—	—	—	—	3	—	. Austria
—	30·5	—	—	—	—	2·1	—	—	p	2 96	—	8·13	2·25	—	3 0	—	Belgian Congo
—	—	—	—	—	0·01	—	—	—	0·03	—	—	—	5·40	—	3	222·0	. Belgium
—	—	1	—	0·02	—	—	—	—	—	9·45	1·7	25·13	—	1·06	11·3	—	. Bolivia
—	256·1	—	1 0	—	—	—	—	—	0 70	(0 02)	—	—	—	p	—	—	Brazil
—	—	—	1·2	1·06	—	—	—	—	0·05	6·18	—	4 64	—	3·25	58 6	—	. Burma
—	p	—	100·4	0·37	p	139 4	—	106 7	0 41	22 98	51·1	—	—	—	183·3	141·6	. . Canada
—	12 8	—	—	—	—	—	—	—	0 02	1 79	16 8	—	—	p	—	—	. Chile
—	1	132	—	—	p	—	—	—	(2 90)	(0·15)	—	?	11·10	9·75	4	—	. China
—	—	—	—	2·86	—	29 3	—	—	0 08	0 17	—	—	—	—	—	—	Colombia
90	104·6	209	—	0 02	—	—	—	18·1	0·18	1·03	—	—	—	—	4·3	7·1	Czechoslovakia
—	—	—	—	0·08	0·10	—	482 1	143·6	2·30	0 56	p	—	—	—	0 9	60·0	. . France
20·8	p	p	(0·3)	0·44	p	—	1,898 0	440 3	3·27	(6·54)	(30 0)	p	2 60	—	180 0	160	. . Germany
—	527·0	—	—	—	—	—	—	—	—	0 02	—	—	—	—	—	—	. . Gold Coast
(114·3)	(1 7)	—	(1 2)	—	—	—	—	(204·8)	0 10	(0·53)	p	—	—	—	(3·4)	—	. . Greece
—	—	—	—	—	—	—	—	—	—	p	—	—	—	—	—	—	. Guiana, Brit.
—	—	—	—	—	—	—	—	—	—	p	—	—	—	—	—	—	. Guiana, Nfth.
—	—	—	—	—	—	—	—	—	—	p	p	—	—	—	—	—	Hungary
—	24·7	—	—	—	—	—	—	—	—	p	—	—	—	—	—	—	. India
26·2	1,051·6	—	—	0 29	p	—	4·2	—	1 49	0 02	—	—	—	p	—	—	. Indo-China
—	5·2	—	—	—	0 02	—	—	—	0·19	p	—	1 58	—	0 38	4 9	4 1	. Italy
5 3	33·0	4,868	—	0·01	—	—	0·4	900 1	1·53	0 72	2,108·9	—	0 08	—	70	37 4	Japanese Empire
—	(66·7)	(33)	—	0 34	(0·11)	p	—	(1,742·7)	(1·24)	(10 50)	(173·7)	2·30	1 84	(1·12)	20	45	. Luxemburg
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	. Malaya
23·0)	—	—	—	(0·06)	—	—	—	(9 0)	—	p	—	77 47	95·37	0·78	—	—	Manchukuo
—	p	375	—	7·11	—	—	—	—	0 10	p	—	—	—	—	—	—	. Mexico
—	74·5	—	0·3	p	1·36	—	—	—	0 01	84 68	(1·2)	0 37	—	0·02	152·2	33 6	Morocco, Fr.
—	10 9	—	—	—	0 03	—	—	—	0·11	0·24	—	0 01	—	—	4·9	—	. Neth E. Indies
—	—	—	6 6	—	—	—	—	—	—	—	12·5	39·17	13·76	—	—	—	New Caledonia
2·1	—	—	0·8	—	—	—	—	1,031·7	—	0·28	95·7	—	0 24	p	8·7	40·6	. Norway
—	—	—	—	2 27	—	—	—	—	(0·04)	16·99	1·6	—	—	(0 02)	1·57	—	. Peru
—	5·6	—	—	—	p	—	—	—	0·05	0·72	—	—	—	—	—	—	Philippines
—	—	—	—	0·50	(0·01)	—	98 4	81·0	(0 46)	(0 06)	—	—	—	—	68·0	105·5	. Poland
—	0 3	—	—	—	—	—	—	594·6	(0 07)	p	12 8	1·10	—	1·22	p	—	. Portugal
—	2·3	—	—	—	—	—	—	—	—	0·08	—	p	—	—	18·8	14 0	. Rhodesia, N.
—	—	—	p	—	—	—	—	20·0	—	0·15	—	0 14	—	0·16	—	—	Rhodesia, S.
—	—	—	—	—	—	—	—	—	—	—	—	15 99	—	(0·05)	—	—	. . Siam
—	—	—	—	—	—	0·3	—	—	—	p	—	—	—	—	—	—	. Sierra Leone
1·7	621·2	—	—	—	—	39·6	—	28·4	(0·10)	1·10	—	0·54	—	0 03	—	—	South Africa
—	—	—	—	—	—	—	—	—	p	0·36	—	0 17	—	0 02	—	—	South-West Africa
—	6·0	—	—	—	—	—	—	170·2	—	0·95	18·1	—	—	0 08	35·4	—	. Sweden
—	—	2	—	—	1·76	—	—	—	0·13	0·17	—	—	—	—	1 2	—	. Tunis
(2·2)	0·5	37	—	—	—	—	—	—	0·26	—	2·7	—	—	—	10·5	—	. Turkey
—	—	—	—	0·12	—	—	—	4·6	3·09	0·07	78 7	1·99	33 8	0 08	7 6	62 0	United Kingdom
181·6	40·2	1,255	0·2	172·66	4·26	10·1	254·0	584·2	8·74	70 99	2,742 0	0·15	—	1 88	559·2	497 2	. United States
—	(2,955·0)	—	—	27·38	(2·18)	100·0	250	(609)	(4·28)	5	—	—	—	—	?	70	. U.S.S.R.
—	—	—	—	27·30	—	—	—	—	0·03	p	—	—	—	—	—	—	. Venezuela
80	4·4	—	—	p	—	—	—	131·9	0·06	2·24	—	—	—	—	48·0	4·9	. Jugoslavia
?	?	10,100	113·0	279·00	?	?	3,000	9,750	35·00	271·00	?	208·00	197·00	37	1,860	1,610	. World Total

[1] Crude magnesite. [2] K_2O equivalent of salts produced.
[3] Mainly crude sulphur, but includes some ore where sulphur content is not reported; also includes some sulphur recovered from industrial gases, especially from the roasting of sulphide ores. [4] WO_3 content of concentrates produced.

the bulk of the remainder is divided between Egypt and the United States, with possibly 10 per cent distributed among several minor producers. A number of countries with the United States in the lead, produce considerable quantities of asphaltic or bituminous rock, carrying usually less than 10 per cent of true asphalt. Production in Trinidad has declined by more than half in the past decade, to 111,965 long tons in 1936.

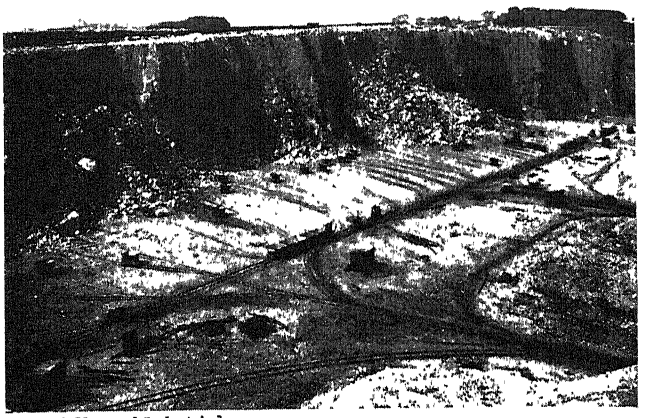
Barium. Although various barium minerals, chiefly the sulphate or carbonate, are mined to the extent of some 1 million tons annually, chiefly in Germany and the United States, and used in industry, it is only within the past few years that barium metal has become an article of commerce The metal has high electron-emitting properties, and is used as a constituent of alloys for making spark plug terminals and similar equipment, and as a " getter " in radio tubes, for the purpose of removing the last traces of oxygen.

Bauxite. An increasing demand for aluminium has stimulated the production of bauxite in a number of countries that were formerly only minor producers, particularly Yugoslavia, Hungary, Italy, and the Soviet Union, but has not yet materially affected the output of the other large producers ; the increased output of the last two is largely for home consumption, but that of the first two goes largely to Germany. On the average, about 60 per cent of the output is used for metal, while the remainder goes into chemicals, abrasives, cement, and refractories.

Cadmium. The entire world supply of cadmium is obtained as a by-product in the treatment of residues from zinc and lithopone plants, and from the fume collected in lead and copper-roasting plants. The first large impetus toward the expansion of production came from the application of the electroplating of other metals, particularly steel, with cadmium, as a protection against corrosion ; more recently a large new demand has resulted from the development of cadmium alloy bearing metals for motor engine uses ; most of the metal used in bearings has been diverted from electroplating, the former being able to stand a higher price than the latter, for which cheaper substitutes are available.

Clay. The clays of chief commercial importance include kaolin or china clay, ball clay, fireclay, bentonite, fuller's earth, and a number of others of minor importance ; these are consumed in the production of a wide variety of products, such as pottery and stoneware, tile, terra cotta, refractories (firebrick, crucibles, glass pots, etc.), building brick and tile, and a host of others ; in addition, clays are utilized in the manufacture of paper, rubber, linoleum, paints, cement, chemicals, plaster, and asbestos products, as well as in the filtering and decolourizing of oils, and in a number of other ways. The clay industry of the United Kingdom is extensive, the output of low-grade clays and shales amounting to 25,670,000 long tons in 1937 ; the higher grades included 2,739,000 tons of fireclay, 1,117,000 tons of china clay and ball clay.

Cobalt. Formerly Canada supplied most of the world's demand, but more recently even more extensive deposits have been discovered in Northern Rhodesia, Belgian Congo, and French Morocco. Canada produced 229 metric tons in 1937, and Northern Rhodesia 883 tons. About 2,000 metric tons are now produced annually, half to be used as metal, in the so-called stellite alloys, combinations of cobalt and chromium, with sometimes other metals added, and in special alloy steels, mainly for permanent magnets. The main compound utilized is the oxide, as a blue colouring agent in the glass and ceramic industries, while smaller amounts



Imperial Chemical Industries]
COWDALE LIME QUARRY, BUXTON

of other compounds are used as driers in paint and varnish.

Columbium. Occurring chiefly as a discarded impurity in certain tin ores, in Nigeria, the tailings piles are now being reworked for their columbium content, which is raised to 45–55 per cent by ore dressing. Production is also being promoted in Belgian Congo, Australia, and Brazil, but most of these ores have considerable amounts of tantalum associated with the columbium. The original application was the addition to stainless steels for high temperature work, for the prevention of intergranular corrosion. Another important development is a columbium-welding rod, which makes a weld that does not require heat treatment to develop its maximum strength

Diatomite. The chief uses of diatomite or kieselguhr are as a heat insulator, a filter-aid in many types of chemical industry, a filler in paints, varnishes, enamels, and rubber, an abrasive, as an admixture in concrete, and as a carrier for insect poisons. Roughly, production is of the order of 100,000 tons annually in the United States, about half that amount in Germany and Denmark, 12,000 tons in Algeria, and smaller amounts in a number of other countries.

Feldspar. Almost the entire commercial utilization of the feldspars is in the ceramic and glass industries. The United States is the world's largest producer and consumer, followed by Sweden, China, and Norway, with a number of minor producers. World production is of the order of 400,000 to 450,000 metric tons.

Fluorspar. The chief producers of fluorspar are the United States (30 per cent), Germany (28 per cent), the Soviet Union (14 per cent), and the United Kingdom (8 per cent) ; France was formerly an important producer, but has declined, while the Soviet Union has increased its output. The world total is now approaching 500,000 metric tons. The iron and steel industry uses the major portion ; the manufacturers of glass and enamel and of hydrofluoric acid and its derivatives absorb most of the remainder.

Gypsum. World production of gypsum is about 10 million metric tons. About one-quarter of the output is used in cement manufacture in crude form, while 1 per cent is used by agriculture as a soil addition and 3 per cent goes to various minor uses ; the remainder is calcined and, except for some 7 per cent that is used in the glass and ceramic industries, is absorbed in the production of plasters, wall-board, and other building products.

Iodine. Chile, formerly the producer of almost the entire world supply of iodine (a by-product in the treatment

of caliche for the recovery of sodium nitrate), now has active competition in the market from the United States (135 tons annually), Java (100 tons), and Japan (no recent figures available). Chile is, however, still the main source of supply, with an output that ranged from 500 to 1,000 tons before active competition began in other countries; no recent figures are available Outside competition has reduced the price to less than one-quarter its former high level

Magnesium. The metal is now used extensively in a wide variety of light metal alloys, and plant capacity and production are expanding so rapidly that it is difficult to determine current outputs. The U.S. Bureau of Mines estimates the 1937 output at 18,000 metric tons. Practically the entire output is obtained by the electrolysis of magnesium chloride. Plans are under way for the expansion of production in most of the larger producing countries

Marble and Granite. Marble production in Great Britain is not of commercial importance, most of the supply being imported. The production of marble in the United States in 1937 was 95,000 short tons. Canadian production was 21,000 short tons.

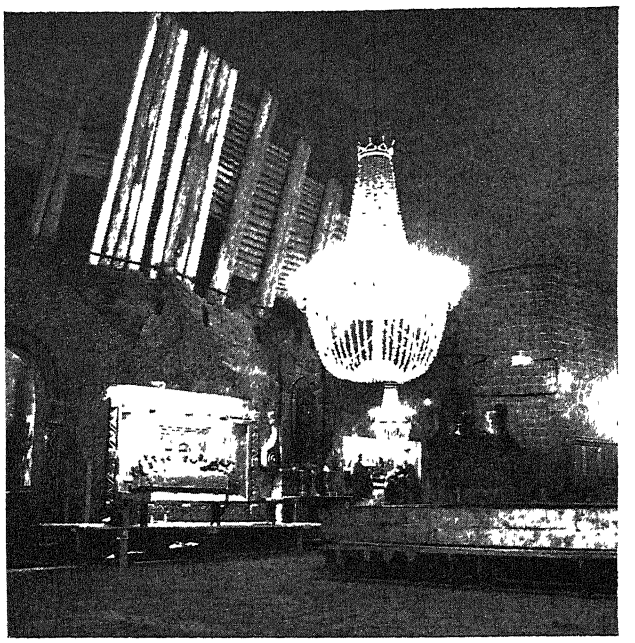
Production of granite in Great Britain during 1937 is reported together with other types of igneous rocks, as increasing by 5 per cent to 10,470,000 long tons, valued at £3,267,000; 91 per cent of the total was used for road metal or ballasts. Canadian production increased slightly to 957,500 short tons, and the United States production of granite as dimension stone was 751,000 short tons.

Mica. The uses of the two types of mica, sheet and scrap, are almost as distinct from each other as if two different minerals were involved. On the average sheet mica constitutes about 25 per cent of the total and scrap 75 per cent. The chief use of sheet mica is in electrical insulation, with small amounts for stove glazing, gramophone discs, lamp chimneys, etc. Scrap mica is ground and goes mainly to the roofing industry, with smaller amounts to wall-paper, paints, and rubber.

The United States production in 1937 included 850 short tons of sheet and 25,200 tons of scrap. Of the Canadian production of 900 short tons in 1937 two-thirds was scrap and the remainder various grades of sheet, though this is a somewhat higher sheet ratio than usual. Indian reports on exports cover only blocks and splittings, though some scrap is also exported. The proportion of splittings in the exports is increasing, and in 1937 had reached 90 per cent of the 14,870 long tons reported. In South Africa production was reported at 1,900 short tons and sales at 1,500 in 1937; of this amount, only 500 lb. was sheet mica. (*See* also *Vermiculite*.)

Molybdenum. The United States is the foremost producer of molybdenum, with about 84 per cent of the world's recorded production to date, and a current output of about 92 per cent of the total. World output was 14,250 metric tons in 1937 against 8,800 tons in 1936. New developments in the applications of molybdenum in alloy steels and cast iron have resulted in a demand which has increased the demand by more than elevenfold in five years.

Nickel. The world total nickel output, 90 per cent of which was from Canada, rose to a new high record level in 1937 (*see* table); preliminary figures indicate a decrease in 1938, but probably less than 5 per cent. Robert C. Stanley, of the International Nickel Co., estimated world consumption in 1938 at 76,000 metric tons, a decrease of 16 per cent from 1937, due largely to the recession in business activity in the United States, which normally takes about one-half of the total output. Consumption



A. Costa]

ST. KINGA CHAPEL, 290 FEET UNDERGROUND, IN THE FAMOUS WIELIEZKA SALT MINES NEAR CRACOW, POLAND. THE CHANDELIER AND WALL-RELIEFS ARE OF SALT

was distributed 60 per cent in steels, 4 per cent in cast iron and other ferrous alloys, 19 per cent in non-ferrous alloys, 15 per cent in Monel, Inconel, and pure metal uses, and 2 per cent in compounds and miscellaneous uses. The drop in consumption in 1938 emphasizes the change that has taken place in the use of nickel during the past twenty years; the proportion of the metal that is used in armament work is now so small as compared with that going into everyday industrial uses that, although 1938 saw the most intensive rearmament activity that has prevailed since the World War, the effect on nickel consumption was slight, and was more than offset by decreased industrial uses, so that the net result was a considerable reduction in consumption.

Selenium. The bulk of the selenium output of the world is as a by-product in copper refining in the United States and Canada; Sweden, the Soviet Union, Mexico, and Japan have some production, but no statistics are available. Production in the United States amounted to 435,800 lb. in 1937. Production began in Canada in 1931, and reached 399,000 lb. in 1937. The chief use is in the glass industry as a decolourizer and as the colouring agent for red or ruby glass; other uses are in pigments, rubber vulcanization, and flame-proofing; one of the most promising of the newer uses is the addition of selenium to copper alloys and steels to improve machining qualities.

Slate. The leading slate producers, in order of importance, are the United States, United Kingdom, France, and Germany; the Soviet Union, India, Belgium, Sweden, Australia, and Canada account for possibly 10 per cent of the output, and the four leaders the remainder. The United States output, which ranks first, was 444,560 short tons in 1937, a slight decline from 1936. British production also declined, being 285,451 long tons in 1937.

Tellurium. The production of tellurium, like that of selenium, is largely confined to the United States and Canada, as a by-product of the copper refineries. United States production was 51,400 lb. in 1937, a decline from 1936; Canadian production has been increasing, and in 1937 slightly exceeded that of the United States. Produc-

tion could be considerably increased if uses demanded it, but increases in consumption have been slow, since most of them required only small amounts; for example, one of the important new uses is as a hardener for chemical lead, but the percentage of tellurium required is so small that the maximum demand for this use does not exceed 50–75 tons annually.

Titanium. Both ilmenite and rutile are utilized as sources of titanium, although the former furnished most of the supply, rutile is probably mined not to exceed 1,000 tons a year, while the figure for ilmenite has grown to something like 200,000 tons. India and Norway are the chief producers. Although some titanium is used as an alloying agent in steel, the great expansion in demand that has come during the past few years resulted from the development of titanium pigments for paint and ceramic work.

Tungsten. The world's tungsten-producing industry centres mostly in south-eastern Asia, whence came 73 per cent of the 1937 total of concentrates (60 per cent WO_3 basis). In spite of disturbances incident to the Japanese invasion of China, the Chinese exports for 1937 were more than double those for 1936. Germany is the largest consumer of tungsten, with 1937 imports of 12,330 metric tons (60 per cent basis). So long as world political affairs remain in their present state of unrest, the demand for tungsten will continue to be heavy.

Uranium. Canada and Belgian Congo are the chief sources of uranium, which is closely associated with radium. In 1937 Canada produced 212,000 lb. of uranium salts from the treatment of 290 short tons of ore. Exports of uranium ore from Belgian Congo are irregular, being none in 1936 and 1,052 metric tons in 1937; exports of uranium salts from Belgium, where the ore is treated, have been increasing, and reached 150 tons in 1936. The chief use is as a colouring agent in ceramics and glass, there being little use for the metal itself.

Vanadium. Required as a constituent in certain types of high-grade alloy steels and cast irons, vanadium is produced in considerable quantities. World production in 1937 was about 1,900 metric tons, of which Peru and South-West Africa each furnished 31 per cent, United States 28 per cent, and Northern Rhodesia 12 per cent. There is also a growing demand for vanadium catalysts in the production of sulphuric acid and certain organic compounds, as well as in the ceramic and dyeing industries.

Vermiculite. Its utilization for house insulation has led to a marked increase in the production of vermiculite, a type of mica which expands enormously when heated, thus giving a cellular structure with a large amount of air space. United States production was 24,556 short tons in 1937, an increase of about 50 per cent over 1936, some of which is exported to Great Britain and continental Europe. Following the successful application in the American market, attempts have been made to exploit deposits in the Soviet Union and South Africa. A 2-inch layer of expanded vermiculite is reported to reduce attic heat loss by 70 per cent, and a 4-inch layer by 92 per cent.

MINERALOGY. During 1938 the newer methods of approach to the study of the atomic structure of minerals as described by Bragg received considerable attention. Additional data accumulated on the chemistry of crystalline compounds.

The present trends in mineralogy were discussed by Palache in his address as the retiring president of the Geological Society of America (*Bulletin* of the Society, March). Five new minerals from Chile were reported by Palache, Foshag, Peacock, and Bandy (*American Mineralogist*, January, February, and May), and three important deposits of sulphate minerals in that country were described by Bandy (*ibid.*, November). Landes reported on the origin of the phlogopite-apatite deposits in the Province of Quebec (*ibid.*, June), and Wright on the composition and the occurrence of garnets (*ibid*, July). Further studies on silicosis were made by Emmons and Fries (*ibid*, October). Spencer submitted important data on the potash-soda feldspars (*Mineralogical Magazine*, September). Spence described the occurrence of nepheline-syenite in Ontario and its use in ceramics (*Mining Technology*, July) Directions for the construction of models illustrating atomic structures were presented by Dorris, Frondel, and others (*American Mineralogist*, February) and by Buerger and Butler (*ibid.*, August). The growing interest in minerals and their importance in modern civilization is evidenced by the founding in Germany of a journal of applied mineralogy, called *Zeitschrift für Angewandte Mineralogie*, of which two numbers have appeared.

Gem Minerals. Studies on the ideal cutting of gem minerals were made by Eppler (*Deutsche Goldschmiede Zeitung* and *Zentralblatt für Mineralogie*, etc.) and by Maier (*Neues Jahrbuch für Mineralogie*, etc.). In a comprehensive paper of forty pages Eppler summarized his studies of recent years (*Fortschritte der Mineralogie*, etc.). He gives data for the ideal cutting applicable to eighteen gem minerals which should be very helpful to diamond cutters, and to professional and amateur lapidaries. Contributions discussing the technique of the cutting and polishing of the diamond were published by Bergheimer (*Neues Jahrbuch für Mineralogie*, etc.) and by Finch (*Gemmologist*, London, May). Two books of interest to the general reader and lover of gems were issued: *Jewelry, Gem Cutting and Metalcraft*, by Baxter, and *The Quartz Family Minerals*, by Dake, Fleener, and Wilson.

Roebling Medal. On Dec. 28, at the meeting of the Mineralogical Society of America in New York, the Roebling Medal was awarded to Dr. Waldemar T. Schaller, a former president of the Society (1926). Dr. Schaller has been a member of the U.S. Geological Survey since 1903. He is the author of about 150 papers on mineralogical subjects. More than forty new minerals have been described by him.

On July 14, 1938, Dr. Alfred E. A. Tutton, a former president of the Mineralogical Society of Great Britain (1912–15) died at the age of 74. Dr. Tutton was noted for his many articles and books on crystallography and the chemical constitution of solid substances. He was the recipient of many scientific honours in Great Britain, which included the award of the Murchison Medal.

MINING. Under this heading is given a brief survey of recent advances in metalliferous mining practice.

As the years pass by and the demand for increased supplies of metals increases, the richer and more readily accessible ore bodies become depleted and the mining engineer has to turn his attention to lower-grade deposits which may, in addition to their less value, present more and more difficult problems to solve. The fact that the production of metals has kept pace with the demand is in itself a guarantee that the efficiency of the various technical processes used in mining is being continuously improved.

During the year 1938 definite advances have been made in many directions, of which the following are examples.

Mining is carried on at great depths to-day, a vertical depth of over 9,000 ft. having been reached. In conditions such as this two major problems arise, namely, heat

and pressure. It has been calculated that every decrease in 1° F means an additional increase of 200 ft in the depth at which mines can be worked Every 200 ft. of depth on the Witwatersrand represents about £20 millions worth of recoverable gold Successful experiments have recently been carried out on conditioning the air in mines in South Africa and America, and it is expected that improved results will be obtained in the near future.

Experiments on various methods of supporting the walls of mines at great depth have also been successfully initiated, and it is reasonably safe to predict that mining on the Witwatersrand goldfield will reach and even exceed 12,000 ft. vertically below the surface.

The reduction of the amount of very fine dust in the air of mines is of vital importance to the health of miners in certain mining fields. Successful attempts to bring about this reduction have been made by obviating any chance of compressed air mixing with the flushing water in the modern hammer drill, and also by the use of rotary core drills fitted with a composite diamond cutting crown. This cutting crown consists of diamond dust mixed with certain metals and so treated as to form a strong composite crown. This work may mark the beginning of an entirely new epoch in the methods of drilling holes for blasting.

The lighting of mines is very important, and a recent improvement has been the introduction of the mercury vapour lamp, so noticeable in street lighting, into the mines. The installations are still in the experimental stage.

The economic separation of the valuable mineral from its useless matrix is another problem. The principle of froth flotation is being introduced more and more at mines, not only for the collection of metallic sulphides, but for other salts of metals and non-metals.

The use of aerial photography, not only for topographical map-making purposes, but also for the making of geological maps, is being recognized as an ally of prospectors. In addition, the science of geophysical prospecting is being applied by mining as well as oil companies.

Metallurgy plays an important part in mining advancement, and recently wire ropes have been so manufactured that an economical load of mineral can with safety be lifted in one shaft from a vertical depth of more than 6,000 ft.

(J. A. S. R.)

MINORITIES. In 1938, the system of the protection of minorities of race, language, and religion through the League of Nations had practically collapsed with the decay of the political authority of the League Council. Only fourteen petitions were sent in at all in 1937–38, and in only two cases did the Committees conclude their examination of cases. The Assembly did not debate the problem of minorities. The League system only retained some small efficacy in partially alleviating, in certain cases, the anti-Semitism which increased during the year almost everywhere in Europe (*see* ANTI-SEMITISM; POLITICAL MIGRATION AND REFUGEE MOVEMENTS); and here, too, its influence was very weak.

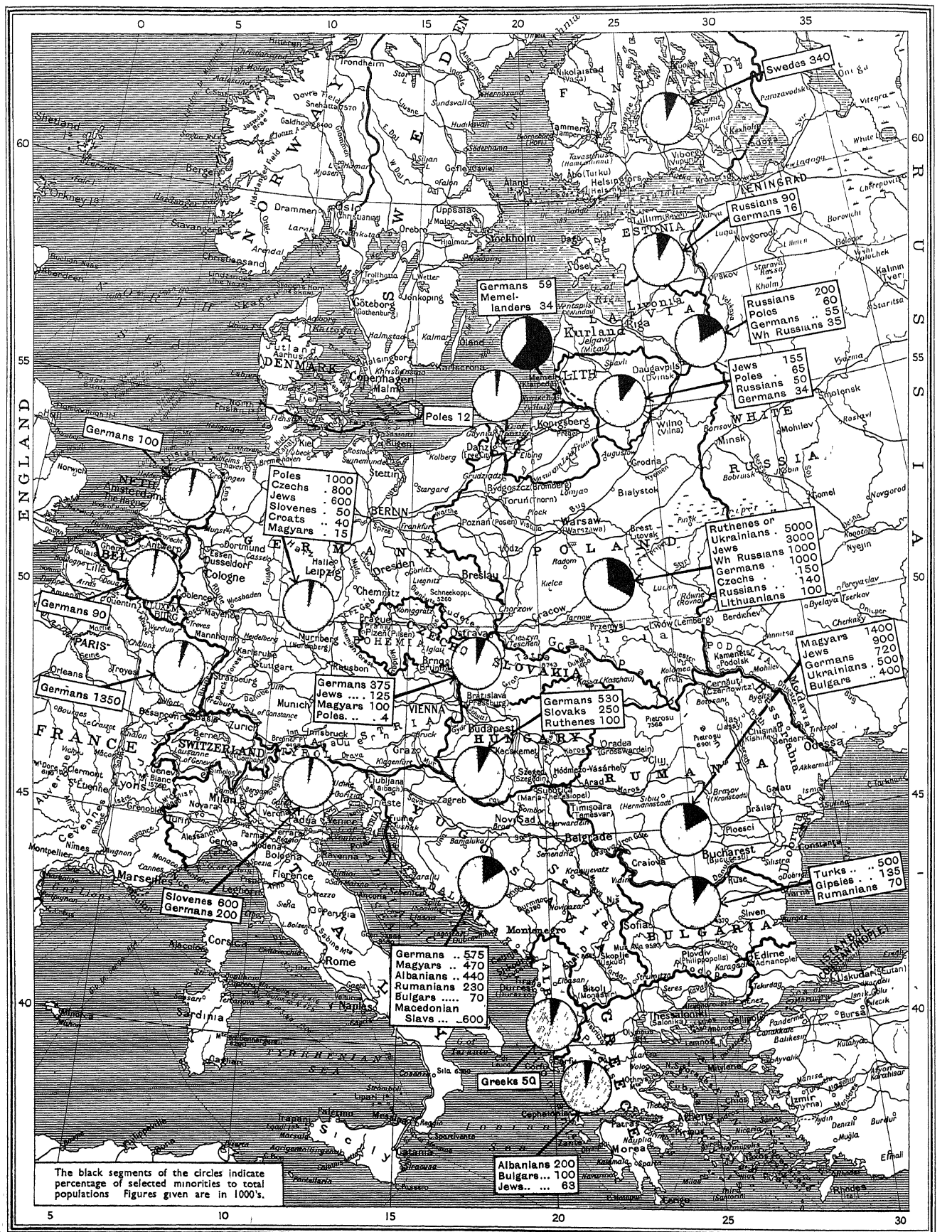
The breakdown of the League minority protection, however, affected, not only the minorities, but also the States. The system had been closely linked with that of collective security, and one of its main purposes had been to save States from individual interference by the State which was or claimed to be the natural protector of the minority really or allegedly oppressed. In 1938 Germany, in particular, vigorously championed in her own interest the claim that a nation possesses a natural right to unite in a single body-politic: the natural political frontiers were the ethnic. This claim she invoked both in annexing to herself Austria and the Sudetenländer, and also in the arbitral award which she, with Italy, delivered on the Hungarian-Czechoslovak frontier The claim was, of course, nothing new—it was identical with that on which most of the States of eastern Europe (west of the U.S.S R.) were founded; neither was it new that Germany allowed certain strategic and economic considerations to operate, generally in her own favour, so that, although the number of minorities in Europe was considerably decreased by the resultant frontier changes, some new minorities were created. The fact that it was successfully asserted did, however, signify that the League's system had failed to protect the States as well as the minorities.

The extent and nature of Germany's claims were somewhat uncertain. Before she intervened, a struggle had gone on in Czechoslovakia highly interesting to the student of minority problems. In essence, the Czechoslovaks claimed the right to rule Czechoslovakia as their own national state, suggesting that on no other basis could the state be maintained at all; their national liberty therefore depended on their national hegemony. The Sudetic Germans, supported by the Magyars, argued that Czechoslovakia, in virtue of its mixed national composition, ought not to be a national state at all, but one in which all the local nationalities met on a footing of absolute equality. Whatever their real ultimate intentions, the demands made by them in the spring and summer did not go beyond this equality, and they claimed that they only asked for secession when equality proved impossible to obtain. Germany also claimed that her intervention had been necessitated by Czech policy. On this basis, if any "Volksgruppe" enjoyed unrestricted national liberty and rights, there would be no case for frontier revision. No claim, for example, could be made against Switzerland or Luxemburg, unless the populations of those countries resolved voluntarily to join Germany. Yet Germany did not admit the principle of a plebiscite in Austria unless conducted under her own auspices; and in the Sudetic Lands also, when the question arose of delimiting the frontiers, she seemed inclined to prefer the principle of national determinism, *i.e.* that the political frontier should be equated automatically with the ethnic, regardless of the possible objections of the peoples concerned.

Besides claiming the right to extend her frontiers on ethnic grounds Germany claimed a far-reaching right to act as the protector of certain German minorities still outside the Reich. Alleging that the League protection had failed, and that in any case the League system was fundamentally vicious, she exchanged notes with Poland in Nov. 1937, in which the two parties, while safeguarding their complete sovereignty, yet admitted the principle that "Volkstum" (personal nationality) was an inalienable right and promised to allow their respective Polish and German minorities full exercise and enjoyment thereof. A similar agreement was concluded between Germany and Czechoslovakia on Nov. 23, 1938, in the interests of the Czech and German minorities remaining after, or created by the new frontiers: these minorities being designated by the now fashionable title of "Volksgruppen". The minorities thus protected certainly got, in theory, a position more favourable than the minority treaties or subsequent practice had accorded them. They received, for example, recognition as corporate entities—a right which the German minority theoreticians had constantly claimed. The recognition by the States concerned of the sanctity of

MINORITIES

Population percentages and figures of Principal European Minorities



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"Volkstum" also set a happy precedent for minorities in general. In other respects, it is very doubtful whether the bilateral system improves on that of the League It has the great disadvantage of abandoning to their fates such "Volksgruppen" as cannot find a "natural protector", and also those (*e.g* the Germans of the S. Tyrol) whom that protector prefers, on one ground or another, to ignore. Further, there is no evidence that such bilateral minority treaties, without appeal to an impartial tribunal, as have been concluded since the War, have been in any way more effective than the League Treaties. Poland, for example, while for years she prepared the ground for her occupation of Teschen by alleging ill-treatment by Czechoslovakia of the local Polish minority, never once invoked the bilateral Polish-Czech Minorities Treaty designed to prevent such ill-treatment.

Of the remaining minorities, the Jews encountered much persecution in Germany, and measures were taken to diminish or to limit their economic and other influence in several countries, notably Rumania (*q v.*), Poland, and Hungary. These measures are more fully described elsewhere (*see* ANTI-SEMITISM; POLITICAL MIGRATION AND REFUGEE MOVEMENTS). Hungary, although unable to exercise so strong a protective influence as Germany, got some alleviation for the Magyar minority in Yugoslavia, and the publication of a minorities Statute in Rumania The organized emigration of Turkish minorities from the Balkans to Turkey continued. Yugoslavia agreed to send 150,000 of these from Macedonia.

It is impossible to give exact statistics of minorities. Apart from the fact that the most recent censuses were usually taken some years ago, the bases on which and spirit in which they were taken vary widely. Most censuses are taken on a linguistic basis, which does not as a rule show Jews, Gipsies, etc., as separate nationalities. Further, there are in many states, especially the more advanced states, very large numbers of bilingual or half-assimilated persons whom the state does not reckon as minorities, while their ethnical kinsfolk claim them to be so. This question merges into that of administrative pressure. Finally, it may often be disputed whether some nationality is a minority at all, or a partner in its state.

The following table gives approximate figures for those national groups of Europe which are undoubtedly minorities in national states not their own, and whose numbers or their political or geographical situation lend them real or potential importance. Figures marked † represent approximations between widely differing estimates; * signifies that the country in question is subject to League minority obligations. For fuller figures of Jews, *see* JEWS, DISTRIBUTION OF.

* Albania: † Greeks 50,000.

Belgium: Germans (Eupen-Malmédy) 90,000.

* Bulgaria: Turks, 500,000; Rumanians, 70,000; Gipsies, 135,000.

* Czechoslovakia: † Germans, 375,000; Magyars, 100,000; Jews, 125,000; Poles, 4,000.

* Danzig: Poles, 12,000.

* Estonia: Russians, 90,000; Germans, 16,000.

Finland: Swedes, 340,000, of whom 27,000 (Aaland Is) protected.

France: Germans (Alsace-Lorraine), 1,350,000 (?).

Germany: † Poles, 1,000,000; Czechs † 800,000; Slovenes, † 50,000; Croats, 40,000; Magyars, 15,000; Jews, 600,000.

* Greece: † Albanians, 200,000; † Bulgars, 100,000; Jews (Spanish), 63,000.

* Hungary: † Germans, 530,000; † Slovaks, 250,000, Ruthenes, 100,000.

Italy · Slovenes, 600,000, Germans, 200,000.

* Latvia: Russians, 200,000; Poles, 60,000; Germans, 55,000; White Russians, 35,000.

* Lithuania · † Poles, 65,000; Russians, 50,000; Germans, 34,000; Jews, 155,000

* Lithuania, Memel Territory: The 1925 census gave 59,000 Germans, 38,000 Lithuanians, and 34,000 "Memellanders".

Netherlands · Germans, 100,000.

* Poland: † Ruthenes or Ukrainians 5,000,000; † White Russians, 1,000,000; Germans, † 1,000,000; † Jews, 3,000,000; † Russians, 140,000; † Lithuanians, 100,000; † Czechs, 150,000

* Rumania † Magyars, 1,400,000; † Jews, 900,000; Germans, 720,000; † Ukrainians, 500,000; † Bulgars, 400,000.

* Yugoslavia: Germans, 575,000; Magyars, 470,000; † Albanians, 440,000; † Rumanians, 230,000; Bulgars (Pirot district), 70,000.

Macedonian Slavs number about 600,000. (C. A. M.)

MOHAMMEDANISM: *see* ISLAM.

MOLUCCA: *see* NETHERLANDS INDIES.

MONACO. A principality on the Mediterranean coast, bounded on the land side by French territory.

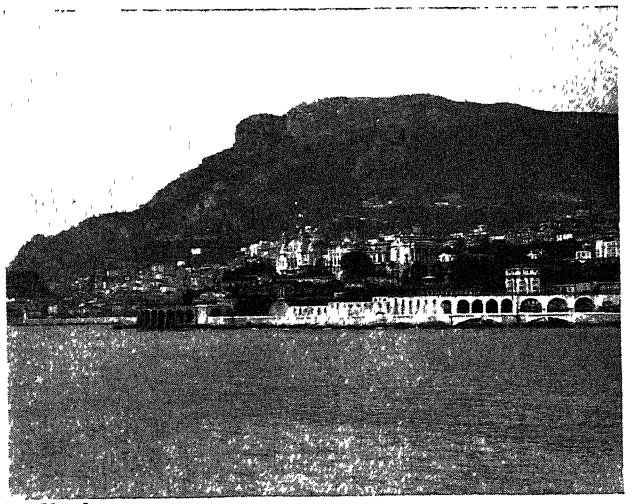
Area and Population:

Area 375 acres (0·59 sq. miles).
Population (est. Dec. 31, 1936), 22,000.
Chief Towns. Monaco, La Condamine, Monte Carlo.

Ruler. Prince Louis II.

Language. French.

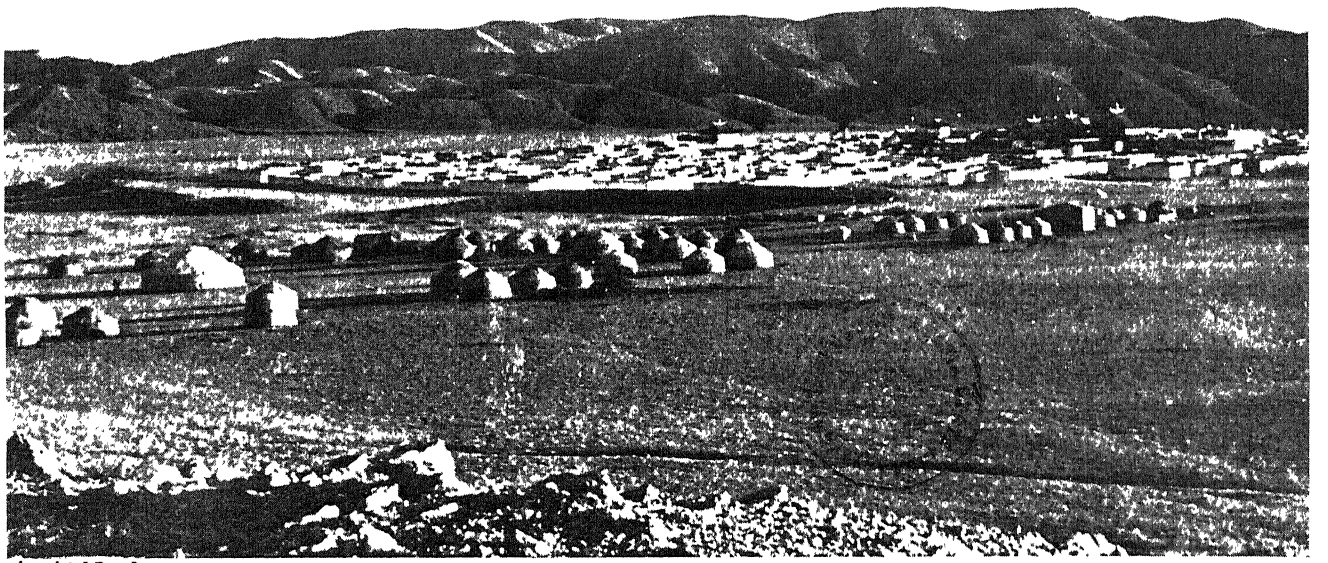
Industry. The chief occupation is catering for visitors, who number more than 2,000,000 annually.



Fox Photos]

MONTE CARLO

MONGOLIA (INNER AND OUTER), is a vast, sparsely populated tableland occupying about 1,000,000 sq. miles in North-eastern Asia. It is bounded on the north by Asiatic Russia, on the west by Chinese Turkestan, on the east by Manchukuo, on the south by China proper. Of the two component parts of Mongolia, Outer Mongolia (622,744 sq. m.) is greater in extent; but Inner Mongolia (334,100 sq. m.), understanding by that term the three Chinese provinces of Chahar, Suiyuan, and Ningsia, is more thickly populated. The population of Outer Mongolia is usually estimated at 750,000–800,000, while there are about 1,500,000 Mongols in Inner Mongolia. The Mongols are mostly a nomadic and pastoral people, although in regions



Associated Press]
A VIEW OF PAILINGMIAO, CAPITAL OF INNER MONGOLIA, WITH GOVERNMENT TENTS IN THE FOREGROUND

where they have mixed with the Chinese they show some tendency to adopt a settled agricultural life. Their unit of social organization is the tribe, or banner. Lamaism, a somewhat corrupted form of Buddhism, is the dominant religion; and Lamas, or priests, constitute a considerable part of the population.

Inner Mongolia is provided with Japanese military and political advisers. After the death of Prince Yun, in April 1938, Prince Teh became head of the Inner Mongolian government. He paid a visit to Tokyo in the autumn of 1938. Because of racial, economic, and geographical conditions two other autonomous regimes loosely linked up with the Inner Mongolia regime, have been set up, with headquarters at Tatung, in North Shansi, and at Kalgan, in South Chahar.

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MONTE CARLO: *see* MONACO.

MONTREAL. According to a report issued in 1938, the area of the city of Montreal has grown from 6,298·74 acres in 1882 to 32,254·07 acres, the increase having been achieved by the annexation of neighbouring municipalities or parts thereof. The estimated population in 1938 was: City of Montreal, 1,163,298; greater Montreal, 1,443,588.

The city has acquired a new seal, replacing that used since 1832. The shield, quartered with the four national emblems, the rose, thistle, shamrock, and fleur-de-lys, is surmounted by a beaver and surrounded by a garland of maple leaves. The motto remains "Concordia Salus".

A committee of ten has been appointed to make preparations for the celebration of Montreal's tercentenary in 1942. Alderman Leon Trepanier is organizer and manager. A Montreal Industrial Bureau is to be incorporated to seek ways and means of bringing new industries to the city and promote the welfare and development of existing industries.

In the December municipal election Mr. Camillien Houde, three times previously mayor of the city, was re-elected to that office by a large majority over a Reform candidate. Mr. B. W. P. Coghlin was elected president of the Montreal Board of Trade for 1938.

The Canadian National Railways have called for tenders for the first section of a $12,600,000 scheme, to be carried out in the next three years, on the site of the uncompleted Montreal terminal; this to include a central passenger station. On Oct. 17 a trans-Canada air express service was inaugurated between Montreal and Vancouver by the Canadian National Railways' Express Department in connexion with the Trans-Canada Air Lines.

On Oct. 22 the Governor-General opened a new wing of the Montreal Convalescent Hospital, which has cost $400,000.

Organization was completed in Montreal of the first anti-aircraft battery to be established in connexion with the Non-Permanent Active Militia of Canada.

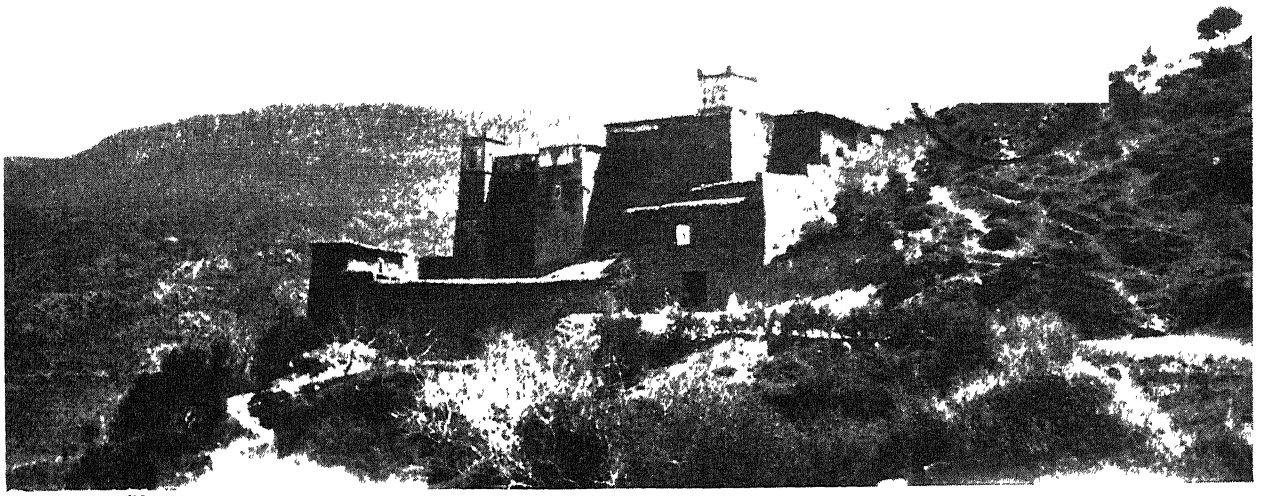
MONTSERRAT: *see* LEEWARD ISLANDS.

MOROCCO (FRENCH). In spite of active propaganda carried on from the Spanish Zone by the Nationalist leader Abd el-Khalek Torres, and by certain influences emanating from Cairo there was in 1938 no recurrence of the disorders of May to Oct. 1937, stirred up by the *Comité d'Action Marocaine*. Most of the prisoners, except the chief leaders of the movement, were released during the first months of 1938.



GENERAL NOGUÈS, RESIDENT GENERAL OF FRANCE IN MOROCCO

During the sessions of the Government Council from July to December the Moroccan section, composed of

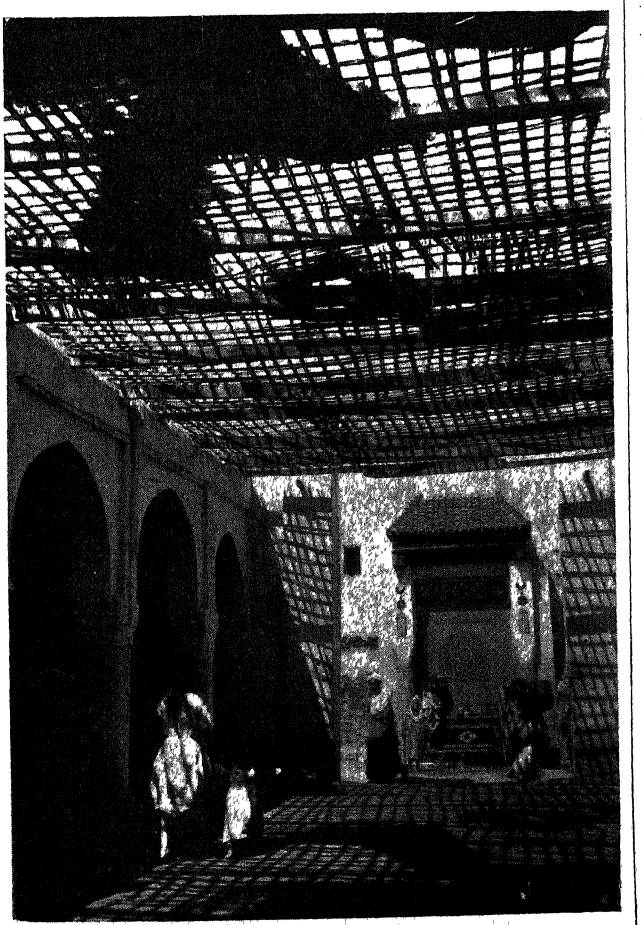


Elaine Bickerstaffe]

A CAID'S KASBAH IN THE HIGH ATLAS MOUNTAINS, MOROCCO

sixty prominent Mohammedans, showed a willingness to collaborate with the government. Education, the place of the small craftsman, native housing, social aid, health measures, and Arab broadcasting were among the subjects dealt with.

After three years of drought, the return of the rains ensured a fairly good harvest in May of 18,000,000 quintals; and General Noguès, the Resident-General, whose activities had been chiefly devoted to the struggle against famine and epidemics, was then able to turn his attention to the economic development of the country. In this sphere, especially as concerns the native peasant population, the progress effected during 1938 was considerable.



Elaine Bickerstaffe]

A MOROCCAN BAZAAR

Measures were passed regarding housing, the artisan class, agriculture, and education. The sordid suburbs, little better than encampments, surrounding the large towns, especially Rabat, are in process of destruction. The fellahs on the common lands, who have too often been threatened with eviction, have now a right of holding in perpetuity which is transmissible to their heirs. Peasants and artisans can be arrested for debt only in exceptional cases Native provident societies have increased loans to agriculture by 75 per cent on those of 1937. A scheme for utilizing the available water to irrigate the land by hydraulic methods has been undertaken at a total cost, when the work is completed, of 5 milliard francs. In this way the plain of Tadla, 98,840 acres of waste land, will be gradually irrigated by the waters of the Um er-Rbia and opened up to native colonization; 1,235 acres were reclaimed in 1938, and it is hoped to reclaim 12,355 acres in 1939–40.

As a corollary to the active educational policy pursued, measures have been passed allowing more Moroccans to be employed in public services. Broadcasting in Arabic has increased its prestige by acquiring the collaboration of Mohammedan scholars.

In view of the results obtained, the three sections of the Council on Dec. 9 unanimously approved the budget project for 1939, with receipts amounting to 1,179,909,770 francs and expenditure of 1,179,002,020 francs, of which 25 per cent is to be devoted to the purchase of plant and to public works.

Morocco's treaty obligations towards foreign countries have continued adversely to affect her balance of trade. Thus in 1937, in a trade balance of 962 million francs imports represented 832 millions, while exports represented only 130 million francs. Morocco therefore hopes for independence in the matter of tariffs. In this respect the Franco-British treaty of July 18, 1938, abrogating the Treaty of 1856, marks an important date, for it restores Morocco's tariff liberty on condition that Great Britain enjoys most-favoured-nation treatment.

On the other hand, Morocco has been able to profit by the system of quotas in force in Switzerland and in Belgium, and has obtained a share of the quotas accorded to France by Poland. (C. A. J.)

Area and Population:

Area 165,800 sq. miles.
Population (est. Dec. 31, 1936) 6,360,000 (Europeans, 391,000).

Chief Towns: Rabat (cap. 83,006); Marrakesh (191,936), Casablanca (258,418); Fez (144,838).
Sultan. Sidi Moulay Mohammed.
Resident-General. General Noguès.
Languages. French and Arabic.
Religion. Chiefly Mohammedan.

Production 1937:

Wheat	568,700 metric tons
Barley	826,100 ,, ,,
Oats	39,500 ,, ,,
Maize	161,500 ,, ,,
Linseed	10,100 ,, ,,
Wool (1936)	18,500 ,, ,,
Coal	107,000 ,, ,,
Manganese	34,000 ,, ,,
Iron ore	35,000 ,, ,,
Lead ore	14,000 ,, ,,
Natural phosphates	1,479,000 ,, ,,
Superphosphate of lime	30,000 ,, ,,
Olive oil (1935–36)	9,000 ,, ,,

Overseas Trade 1937:

Imports	1,765,624,000 francs
Exports	1,143,900,700 ,,

Communications 1937:

Roads, total	4,350 miles
Railways, open to traffic	463 ,,

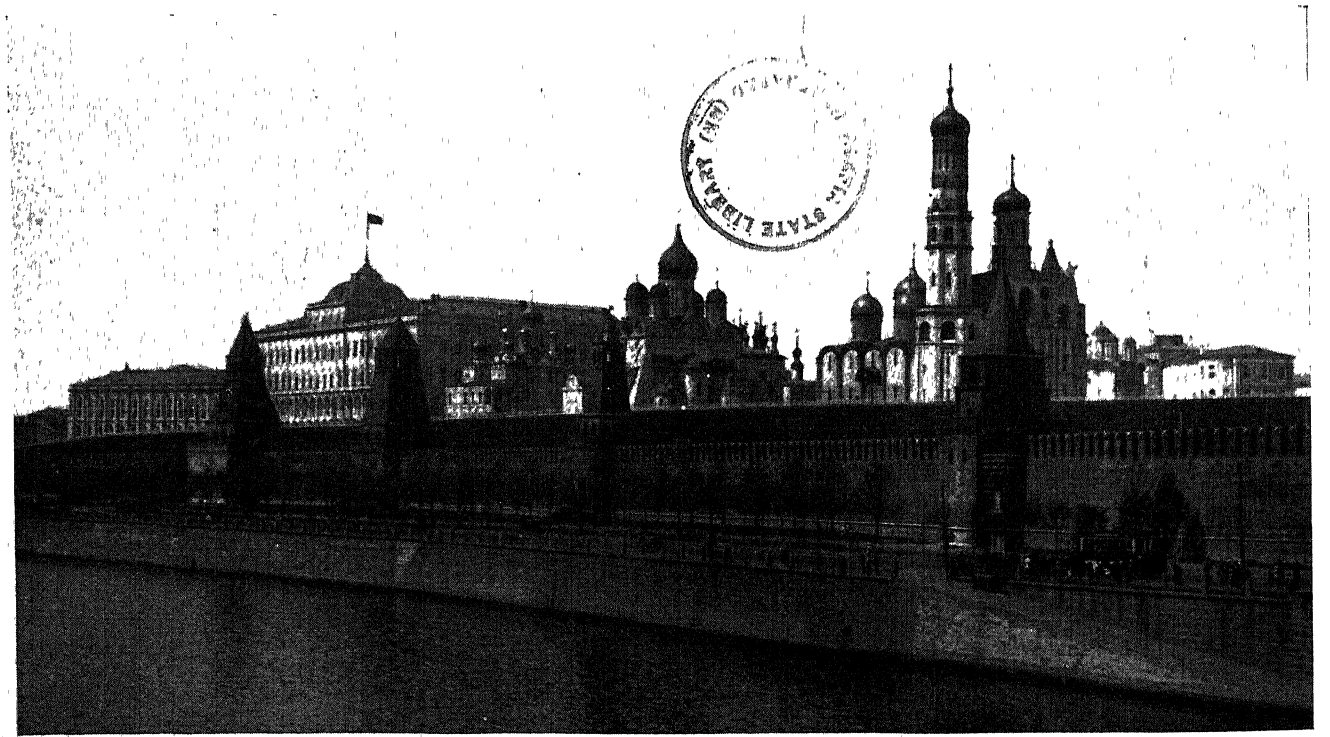
Finance and Banking:

Revenue (est. 1937)	902,374,500 francs
Expenditure (est. 1937)	902,362,310 ,,
Notes in circulation (Sept. 30, 1938)	811,000,000 ,,
Gold Reserve (,, ,,)	129,000,000 ,,

MOSCOW. In 1938 Moscow entered on the third year of its Ten-Year Reconstruction Plan, which was carried on with great enthusiasm. As in former years, whole streets were blown up and rows of new, modern, many-storied buildings erected in their place. The first stage in the building of the huge Palace of the Soviets, which is to be one of the new sights of the city, was finished, and five new bridges across the Moscow River were completed in April. Six new stations of the Moscow Underground Railway were opened to traffic in September, adding six miles of line, and work on the third line was begun. The total length of the Moscow Metro is at present 16·5 miles. The average speed of the trains was increased from 16·4 to 19·2 miles per hour. Moscow has at present phototelegraphic communications with sixteen large towns of the Union, and Gorki, Kuybyshev, and Odessa are shortly to be included. A new telephone line between Moscow and the Kirghiz capital Frunze was opened in 1938 Preparations for the laying out of a gigantic Botanical Garden of the U.S.S.R, covering 714 acres on the banks of the Moscow River, were taken in hand. Four new theatres are being built for Moscow's theatre-loving public (in 1937 alone 3,000,000 persons visited the main theatres); a new departure was the opening of a special theatre for the deaf and dumb. In November the Moscow Art Theatre was *fêted* with well-deserved enthusiasm on the occasion of its fortieth Jubilee. Numerous actors and other members of the theatre, many of whom had been connected with it from the beginning, were distinguished by the government with orders, pensions, etc. A memorial is to be erected in Moscow by order of the government to the founder and leading spirit of the Art Theatre, Stanislavsky (*q v*) The number of Orthodox Churches in Moscow has fallen from about 450 before the revolution to twenty in 1938. On July 1 the Dorogomilov Cathedral, the seat of the Metropolitan Sergei, Acting Patriarch of all Russia, and in August the last Lutheran Church, that of SS. Peter and Paul, were closed by Soviet authorities.

The English *Moscow Daily News* was merged at the end of February with a considerably enlarged weekly, the *Moscow News*. (S. YAK.)

MOTION PICTURES. With an audience of 85 millions who go to the cinema weekly in the United States, and 150 million others in the rest of the world, Shirley Temple, an American child of nine and a half years, headed all popularity contests, not only in her own country but abroad. According to the annual survey of the *Motion Picture Herald*, a trade publication which claims to poll the theatre owners of the United States, Shirley Temple, for the fourth year, was named first. Of all cinema favourites, Shirley was the star who brought in the most money at the



Planet News] MOSCOW. THE KREMLIN, WITH THE IVAN BELL TOWER, FROM THE NEW MOSCOW HOTEL

box office. She was followed, in the order named, by Clark Gable, Sonja Henie, Mickey Rooney, Spencer Tracy, Robert Taylor, Myrna Loy, Jane Withers, Alice Faye, and Tyrone Power.

The supremacy of the United States in film production remained unchallenged Yet, from a financial standpoint, 1938 was not one of the industry's most profitable years. This condition was attributed to foreign restrictions, quotas, and prohibitive taxes on American films by foreign governments, particularly the totalitarian states.

It is significant that Shirley Temple was banished from the German screen by governmental decree. Along with her, the Marx Brothers, Charlie Chaplin, and Laurel and Hardy comedies also incurred the Nazis' displeasure.

The totalitarian states zealously employ import, quotas, and provide governmental subsidies to check the importation of foreign films. It is the apparent theory that to shut out alien ideas promotes the acceptance of nationalistic opinions And because those who live under dictatorships are subtly influenced by the appeal to human emotions—the joys, sorrows, and ambitions that make the whole world kin—the ruling powers fear American films. This, it is said, was the real reason for the ban on certain outstanding productions.

The motion picture industry in the United States, which in 1938 had an output of 429 feature pictures and 360 short subjects, has always had to rely on sheer entertainment value and artistic merit to continue to occupy 75 per cent of the world's " screen time ". This is because the United States imposes no discriminatory regulations on film imports except a normal tariff rate equal for all. Nevertheless, American films were successful in competing with foreign films, though the year was marked by a reduction in the number of feature films shipped abroad. In 1938, the motion picture industry in the United States had an investment of more than $2,000 millions. With only 30 years of existence in California, this industry has attained world-wide scope No other business institution boasts such extraordinary growth in the space of one generation. In its influence on human lives it overshadowed even its amazing financial triumphs and was seen to take on, more and more, the characteristics of an international service.

European film production, in many cases aided by state subsidies, increased generally. However, it is doubtful whether any of the producing companies of England, Germany or Italy showed profits, though some of the French companies may have done so. Film production in Great Britain improved steadily even though the withdrawal by backers of considerable investments caused several of the largest companies to suspend operations, so that practically the entire business underwent reorganization.

The most noteworthy event in British films in 1938 was George Bernard Shaw's entry into the industry with *Pygmalion*. Up to the time he gave the producer, Gabriel Pascal, permission to film *Pygmalion*, he had been adamant against allowing his plays to be adapted for the screen. This picture, *Owd Bob*, *The Vessel of Wrath*, *South Riding*, *The Lady Vanishes*, and *The Drum* were among Great Britain's most successful productions.

The American companies made more pictures in London in 1938 than at any other time. *The Citadel*, *A Yank at Oxford*, and *We're Going to be Rich* were among the most successful. This increased activity of American producers abroad was largely due to the stringent film quota law recently passed by Great Britain to protect its film industry.



General Film Distributors, Ltd.]
LESLIE HOWARD AND WENDY HILLER IN A SCENE FROM THE FILM OF BERNARD SHAW'S PLAY, " PYGMALION "

The law provided a quota for distributors, starting at 15 per cent and increasing in ten years to 30 per cent and for exhibitors starting at 12½ per cent and increasing to 25 per cent. Metro-Goldwyn-Mayer, Warner Brothers, 20th Century-Fox, and Paramount were among the largest American producers in England. Adolph Zukor resigned as production head of Paramount to go to England to take charge of this company's activities there.

The French film industry made remarkable progress in 1938. The general excellence of French films, both from the standpoint of able direction and originality of theme, led to an appreciable increase in their international distribution. *The Grand Illusion*, *The Baker's Bride*, *Ballerina*, *Orage*, and *The Human Beast* were among the most successful of recent French productions.

Italian film production lagged behind, in spite of the efforts of the government-subsidized industry to interest American producers in coming to the recently completed film centre, *Citta del Cinema*. Although tentative announcements of American affiliations were made, none actually materialized

The German and Russian governments continued almost entirely to control motion picture production, so that most of the films of these nations were nationalistic propaganda. There was little market for these pictures in other countries except where there were groups sympathetic towards the Hitler regime or Communism.

For the first time, a total absence of labour troubles in the United States prevented losses due to studio closures. This condition coincided with an almost complete organization of studio staffs in trade unions. Directors, screen writers, and publicists were the most recent to seek recognition under the new national labour law. Make-up artists and film editors already had signed contracts. Stage employees, musicians, electricians, painters, teamsters,

and photographers had long been organized, with contracts mutually agreeable to them and to the producers.

The cinema industry has maintained in the United States an independence of governmental control that has been the envy of motion picture producers in other countries. Under the direction of Will H. Hays, for 15 years head of the Motion Picture Producers and Distributors of America, Inc., the major companies have submitted to a voluntary censorship. The most serious criticism of this idealistic scheme is that it sometimes sacrifices artistic integrity to the considerations of security at the box office. Recently, however, Mr. Hays, who is also an attorney, has been occupied with a more serious task. This is the organization of the defence of the leaders of the industry against a suit to separate the producing interests from those of the distributors. This suit is an action in equity filed by the United States Attorney General in Federal Court at New York. It was brought under the Sherman anti-trust act and alleges that the defendants are guilty of forming an illegal monopoly. It is announced that the Department of Justice believed the suit was necessary to restore competitive conditions in the industry. To this suit, Mr. Hays replied that the motion picture producers and distributors would welcome the prospect of an endeavour to clarify the application of existing laws to the trade customs that had grown up in the development of the motion picture industry.

From the standpoint of production, the most important trend during the past year in Hollywood seems to have been the rise of family pictures and the decline of the elaborate "musical". *Alexander's Ragtime Band* was the chief musical film, principally because it had a good story as well as tuneful music. It was followed, however, by pictures made on small budgets, an unusual phenomenon which constituted one of the most gratifying trends of the year.

The outstanding picture of this new category was *Love Finds Andy Hardy*. This simple family picture presented normal incidents in the average middle-class home. It was followed swiftly by a series of similar films, all in the fashion of homely, intimate recitals. *The Jones Family, Four Daughters, The Sisters, Sing, You Sinners*, all in this mould, were equally well received.

However, the most profitable, and perhaps most popular picture up to the present, is *Snow White and the Seven Dwarfs*. This was Walt Disney's first feature-length, hand-drawn cartoon-type picture. The first six months' receipts repaid the enormous costs of its production (which lasted three years). In eight months its gross receipts were more than $4 millions, with a total of twice that figure predicted. Previously the most profitable picture had been *The Birth of a Nation*, which, from all available records, had taken between five and six million dollars in gross.

Another unique picture was the one featuring Edgar Bergen's famed ventriloquist dummy, Charlie McCarthy, in *A Letter of Introduction*. The series of skating pictures inaugurated by Sonja Henie touched off a remarkable cycle of similar box office features. RKO-Radio produced a feature based on the life of Douglas Corrigan, the young California aviator who flew the Atlantic in a rickety, second-hand plane in July.

Despite these "novelty" pictures, producers during 1938 did not neglect the time-tested formulæ that usually spell success. Among the most elaborate of the costume pictures was Metro-Goldwyn-Mayer's *Marie Antoinette*, the season's most costly production with a budget requiring an expenditure of nearly $3 millions. Other costly films



Metro-Goldwyn-Mayer Pictures, Ltd.]
FILMING "THE CITADEL." CAMERA AND MICROPHONE ARE MOUNTED TO TAKE A WALKING "SHOT" OF ROBERT DONAT AND ROSALIND RUSSELL, AT COTTAGE GATE. KING VIDOR, DIRECTOR (WITH HAT), STANDS ON CAMERA TROLLEY

were: *In Old Chicago, You Can't Take it with You, Test Pilot, Algiers, If I Were King, Jesse James, The Great Waltz, Spawn of the North, Suez, Gunga Din.*

Notable also was the large number of Technicolor films, with new inventions in colour technique promising an even greater number in 1939. These included *Robin Hood, Men With Wings, Kentucky, Gold Is Where You Find It*, and *The Adventures of Tom Sawyer*, which incidentally introduced two new child stars, Ann Gillis and Tommy Kelly. *Gone With the Wind*, the controversial casting of which made it the most talked of film prospect for 1939, was scheduled for production in colour, and with a budget of $2 millions.

Television, so long anticipated, came a step closer to realization when Paramount Pictures announced an alliance with the DuMont Laboratories. The DuMont Company has developed its own television system requiring only three megacycles. Other major studios are also conducting experiments, and it is believed that during 1939 America will compete with the British market, which has had a monopoly in commercial television. (L. O. P.)

The year 1938 was marked by many technical developments in the motion picture industry. Among those relating to the actual production of motion pictures, the following may be noted:

Cameras. Camera technique had advanced during the latter years of silent pictures to such a point that all types of moving shots and complicated travelling shots were possible, but the coming of sound and the necessity for confining the camera to its sound-proofed housing made the use of any type of travelling shot impossible and tied the camera down to one spot during a scene. As recording technique developed and additional engineering knowledge became available, the size of the "blimps", built around the camera to absorb and cut off unwanted noises, was gradually reduced until the present-day cameras are covered with sound-proof housing which is comparatively light and introduces relatively few limitations to motion picture photography. During the past year, further development in the silencing of cameras took place and new type "semi-blimped" cameras were introduced for use in the studios. These cameras are constructed so that the

" blimp " housing is an integral part of the camera and is sufficiently light in weight to permit all types of movement. These cameras may be used without limitation in any type of travelling or moving shots, and during the past year such moving shots have again become almost as prevalent as before the coming of sound

New Types of Films. The Dupont Company has introduced two types of continuously dried sound-recording stock which eliminate the periodic volume fluctuation which had formerly caused troublesome changes in recorded-sound volume The Eastman Company also has brought out three new types of faster photographic negatives which have found widespread use in the photography of newsreels as well as in straight studio production. One of these films, introduced in October 1938, has a speed approximately twice that of former similar types and gives finer grain with similar developing characteristics One of the other new negatives introduced for use in filming exteriors also has approximately twice the speed of its predecessors with approximately the same grain characteristics; while the third negative has an extremely high speed (approximately four times that of its predecessor), and is designed for use in highly specialized motion picture photography.

Special-effect Photography. Advancements in " special-effect " photography (commonly known as " trick " photography) have been particularly marked during 1938. In the ordinary run of current motion picture production, it is becoming more and more common practice first to photograph the various necessary backgrounds, and later to combine these with foreground action to obtain the finished story. This has resulted in a great broadening of the possibilities for producing pictures which might previously have been economically impossible. Among the important productions which utilized this type of effect-photography to a great extent were *Adventures of Tom Sawyer, Bringing Up Baby, Dawn Patrol, Spawn of the North, Suez,* and *Test Pilot,* each one of which would have been greatly reduced in effectiveness, if not technically or economically impossible, without the use of various types of special-effect photography.

Colour Photography. Continuous progress was made throughout the year in colour photography, with the ntroduction of new processes as well as a considerably increased use of those already available to the industry. Sixteen colour features were produced by the major producers during 1938 as compared with six in 1937. These did not include a great number of short subjects, travelogues, cartoons, and other miscellaneous product also produced in colour during the year. Several colour productions which would have been considered impossible at the beginning of the year were made towards the end of the year without difficulty.

Motion Picture Set Lighting. A continued advancement in this field was noted during the year, particularly by the development of arc lights engineered particularly to meet the requirements of colour photography. One of these units, known as the " Duarc ", gives an almost perfectly smooth and flickerless light of high intensity, both of which are features of great importance in colour photography. By means of longer carbons and a new type of carbon-feeding mechanism these lights burn for a period of approximately two hours without retrimming, while lamps of the previous type burned for approximately forty minutes at the most. This considerably longer burning period becomes an important economic factor on a motion picture set lighted with 100 or more such lamps.



RKO Radio Pictures, Ltd.]
THE MARX BROTHERS IN A SCENE FROM " ROOM SERVICE." L. TO R. FACING: GROUCHO, CHICO, AND HARPO MARX

Motion Picture Sound Recording. Research is continuously conducted in each of the studios for the purpose of improving the quality of sound recordings. Many new items of testing equipment have been made available to the studios during the past year, and through their use the recording of sound for motion pictures is becoming more and more an exact science.

A new type " super-portable " recording system, weighing less than 150 lb., was introduced during the latter part of 1938 for use when extreme portability is necessary, as in small boats, aeroplanes, and moving vehicles of all kinds where it would be difficult, if not impossible, to use the larger and heavier recording system.

One of the major sound equipment suppliers during 1938 announced the availability of a complete newly engineered wax disc recording and reproducing equipment which may find some use in the studios for musical and other specialized recordings. By this means the recorded sound may be immediately played back on to the set without the period of waiting which would be required for processing the film were the sound recorded on film.

In the early days of motion picture sound recording, the common practice was to record dialogue as well as accompanying sound effects, incidental music, etc., on the set at the same time as the original scene was photographed. This method gave little control of the volume balance between dialogue and the incidental sound effects, music, etc. Gradually more and more sound effects and music have been recorded at a different time and away from the set upon which the dialogue is recorded and the picture is photographed. This trend has been emphasized during the past year with several studios adopting as standard practice the method of recording only dialogue on the set and " dubbing " in all incidental sound effects, background music, etc. It was necessary to develop equipment and methods giving exceptional quality to the re-recorded sound, so that this might be comparable with that of the original recording. Limiting the recording on the set to dialogue only has resulted in a greatly increased freedom in production for the director, cast, and technical crew, and has eliminated delays in production by permitting corrections and adjustments in sound quality during the re-recording operation rather than consuming expensive production time during the original filming of the scene on the set.



Academy Cinema, Ltd]
A SCENE FROM THE FRENCH FILM, "THE GRAND ILLUSION." THE POLE MADE FROM FOOD TINS TO EFFECT AN ESCAPE

Some of the main technical developments in the exhibition of motion pictures in the United States have been as follows:

Theatre Equipment. The year 1938 was marked by the introduction of a number of new companies supplying motion picture theatre sound and projection equipment. While previously nearly all theatre sound equipment had been furnished by one or the other of the two major equipment companies, during 1938 one of these companies withdrew from the field and licensed a number of other new companies to manufacture and sell equipment under its patents. At the present time there are at least four major companies furnishing equipment to theatres, and the additional engineering and development work required to design new equipments for each of these companies has resulted in a considerable improvement over some of the older type equipments previously available. In addition to these new sound systems, one of the major equipment manufacturers has placed a completely newly designed picture projector on the market for theatres.

Theatre Servicing. In addition to the introduction of several new companies furnishing sound equipment, the past year has seen the organization of at least one new national theatre servicing organization and the increasing importance of several others. This has greatly expended the available facilities for quickly taking care of any emergency which might arise in any theatre in any part of the country due to failure of equipment. A good many theatres are equipped with sound and picture projection equipment which has been in use from five to ten years. The past year has witnessed a programme of modernization of many of these equipments to bring them up to date in order that current recordings from the various studios may reproduce to the best advantage in each and every theatre.

Theatre Standardization. Theatre standardization activities, begun by the Research Council of the Academy of Motion Picture Arts and Sciences in 1937, were considerably increased during 1938, and a number of new theatre equipment standards were adopted during the year. A major part of these theatre standardization activities was concerned with co-ordinating studio sound recording and theatre sound reproducing, in order that each theatre may be able to take full advantage of the advances in these two fields. (G. S. M.)

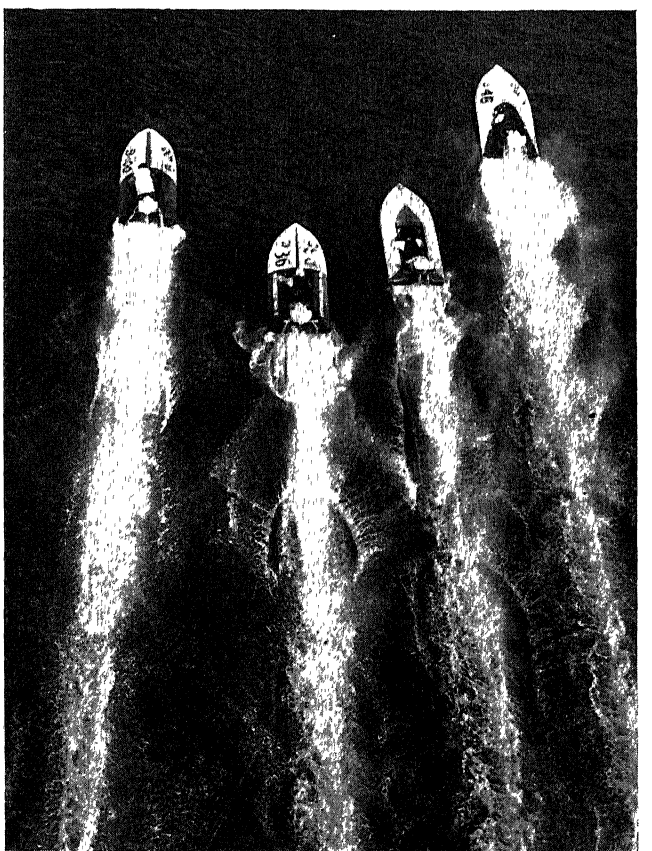
MOTOR-BOAT RACING. The great event of the 1938 season was Sir Malcolm Campbell's beating of his own record (see *Ency. Brit Book of the Year*, 1938, p. 423) with his "Bluebird" on Sept 17. After many attempts in early August on Lake Geneva, he moved to the small Lake Hallwil and there reached an average speed of nearly 130·91 m.p.h. Earlier in the season Sir Malcolm had received the League of Nations trophy, having beaten a "field" of ninety-four.

In Great Britain the premier award, the Duke of York's International Gold Challenge Trophy for inboard motors, was won at Torbay on July 2 by S. Mortimer Auerbach, of the U.S.A., his nearest competitors both being Canadians. In the thirty-mile race for the International speed-boat trophy, held at Oulton Broad, Aug. 27, Geoffrey Holt and E. Treglown (both Great Britain) were first and second, and D. Margariti (France) third.

A number of accidents to speed-boats were recorded during the year, and in August a strong protest was made to the Westmorland county council against the use of Lake Windermere as a racing track.

United States. There were no noteworthy developments in either hulls or engines. In spite of this, new speed records were established in various classes. The 225-cu. in. (4-litre) class record, set by Hugh Gingras driving "Gray Goose", of 73·7 m.p.h., and accepted by the International Motor Yachting Union, was broken by Jack Cooper in "Tops II", with a 75·39 m.p.h., for which recognition by the International Union has been requested.

The Gold Cup Race at Detroit in September was won by the Italian boat "Alagi", owned and driven by Count Theo. Rossi, which set up a new lap record for a Gold Cup contest of 72·707 m.p.h. Most of the American entries broke down and failed to finish.



Keystone]
OUTBOARD MOTOR-BOATS AFTER THE START OF A RACE ON THE SCHUYKILL RIVER, PHILADELPHIA, U.S.A.

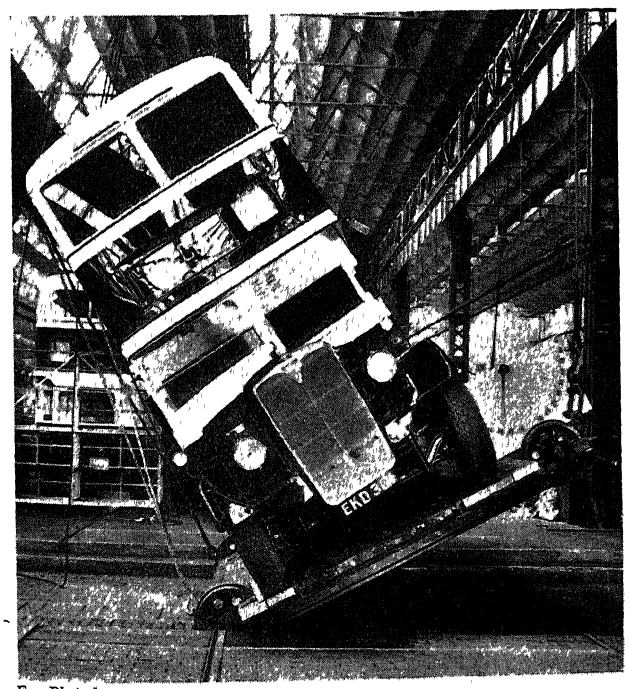
MOTOR BUSES. Developments in motor buses during the past year have still, in the main, been directed towards detailed improvements. The adoption of the oil engine in the European countries has proceeded at an accelerated rate, largely by reason of economic pressure. In America, greater interest is being taken in this engine, as is evidenced by the production of a two-cycle super-charged compression ignition engine suitable for bus work. By reason of international instability and the urge to employ home-produced fuels, increased interest in producer gas operation has been displayed in Europe.

Developments still proceed with alternative positions for the power plant; America has given the lead in this direction, but certain British and Continental manufacturers are now producing models of single-deck vehicles having the engine disposed under the floor or at the rear of the body, with a view to improving passenger accommodation.

An interesting development in America is the production of a large-capacity single-deck bus having four axles. Both the leading and trailing axles are steerable, with power drive to the intermediate axles. The vehicle is constructed in two main sections which are "hinged" together in the horizontal plane to permit flexibility over road dips, etc. The vehicle is intended for city operation as a competitor to the large-capacity tram.

The interest in automatic and semi-automatic transmission arrangements continues. In America, interest in the hydraulic torque converter is displayed, and a standard unit of this type is now being manufactured and is receiving some popularity in application to buses in urban service. Several automatic and semi-automatic devices are in the experimental stage, although few have yet reached large-scale application.

The servo-assisted brake with or without hydraulic actuation is still largely in use in England, although there is a trend towards the adoption of air-pressure brakes, which system predominates in America and also finds favour in certain other Continental countries.



Fox Photos]

NEW BUSES, CARRYING SANDBAGS FOR PASSENGERS, BEING TILTED 28 DEG. IN A GRAVITY TEST AT THE CORPORATION WORKS, LIVERPOOL, DEC. 19, 1938

There are signs that the suspension of vehicles is receiving closer attention, although many difficulties are inherent in the satisfactory springing of large buses, particularly the double-decker, which militate against rapid development. It has been recognized that necessity exists for the provision of a means of roll control, with a view to ensuring greater stability in service, and this aspect of the subject is receiving attention from the experimental standpoint.

As regards bodywork, the "chassis-less" type of all metal construction finds popularity in America, and interest in this development is being taken in certain European countries Full-fronted bodies predominate, but there is a tendency, especially in England, to improve the driver's visibility, and this may influence the frontal shape of bodies. Streamline finishes still enjoy popularity in most countries, although a tendency is noted towards designs somewhat less extreme in character than hitherto.

There is an increasing tendency for the production of specialized buses for sight-seeing purposes, having glass panels in the roof and being provided with large windows to give the maximum visibility. (A. A. M. D.)

MOTOR-CYCLE RACING. The principal feature of the 1938 season was a spate of record-breaking. At Brooklands (April 2) records for the 500-c c. and 250-c.c. classes were broken, the former by D. C. Minnett (Norton), who covered the outer circuit at 116·36 m p h., and the latter by L. Archer (New Imperial). Minnett also broke the record for the five laps of the Mountain Course (250 c.c).

At the Tourist Trophy meeting (Isle of Man, mid-June) the senior was won by H. L Daniell (Norton), in the record time of 2 hr. 57 min. 50·6 sec. (89·11 m p.h.), beating the circuit record on his last round at 91 m p.h.; second place went to Stanley Woods (Velocette), at 88·99 m p.h., with Freddie Firth (the holder) on his heels averaging 88·98. Woods won the junior for the ninth time, beating the record for the circuit (37¾ m.) in his third lap at 85·3 m.p.h., and averaging 84·08; E. A. Mellors (Velocette) was second (82·4 m.p.h.), and third, fourth, and fifth places were taken by the Norton team, who thus won the manufacturer's team prize. The lightweight event (264 m.) was won, also in record time, by E. Kluge (German, D.K.W.), in 3 hr. 21 min. 56 sec. at an average of 78·48 m.p.h., S. Wood (Excelsior) being second with an average of 74·38 m.p.h. The meeting was marred by a fatal accident—the first for three years—to a competitor, J. Moore being killed instantly when he crashed near Mountain Lodge, and by a serious accident to Karl Gall, leader of the German B.M.U. team.

Two more records were made at the British Motor-Cycle Racing Club's meeting at Brooklands on June 25: Minnett (Norton), in the 750-c.c. class, covered the Outer Circuit at 117·19 m.p.h., and R. Harris (Norton) won the most important of the Mountain Circuit events (five laps) at 73·38 m.p.h.

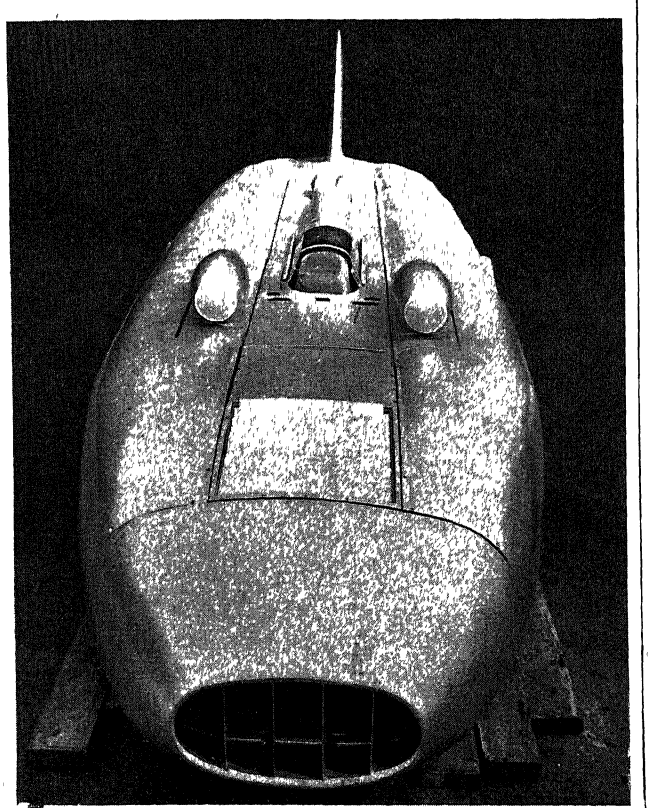
In the International Six Days' Trial, held under particulary exacting weather conditions in Wales (July 11–16), with speed trials at Donington Park, 209 competitors (of whom over half retired) from nine countries took part, including two teams of German storm troopers and three from the British Army. The International Trophy went to Great Britain for the third time in succession, with Czechoslovakia as runner-up; the Silver Vase fell to Germany, with Sweden, Great Britain, and Ireland following in that order; the German S.S. won the Hühnlein and the Bowmaker Club team trophies, the German N.S.K.K. being runner-up in each case. Of the 33 gold

medals, Germany won fourteen, Great Britain twelve, Holland three, Czechoslovakia two, and Ireland and Sweden one each

The Senior Trophy at the Manx Grand Prix was won by K Bill (Norton), who broke both the lap and race records on the Tourist Trophy course (226½ m), averaging 84·81 m p h , at the German Grand Prix, the British rider J. H. White (Norton) won the 350-c.c. class at 79·85 m.p h , and at the Italian Grand Prix (Monza, Sept 25), this event was won for Britain by E. A Mellors (Velocette) at nearly 87 m p.h. At the Swiss Grand Prix (Geneva, July 27), British riders (on Nortons) won all three races in which they competed—the 350-c.c , 250-c.c., and Sidecar. In the Ulster Grand Prix (Belfast, Aug. 20), the winners of the 500-, 350-, and 250-c c classes were, as in 1937, J. West (B M.N), E. A. Mellors (Velocette), and E. R. Thomas (D K W)

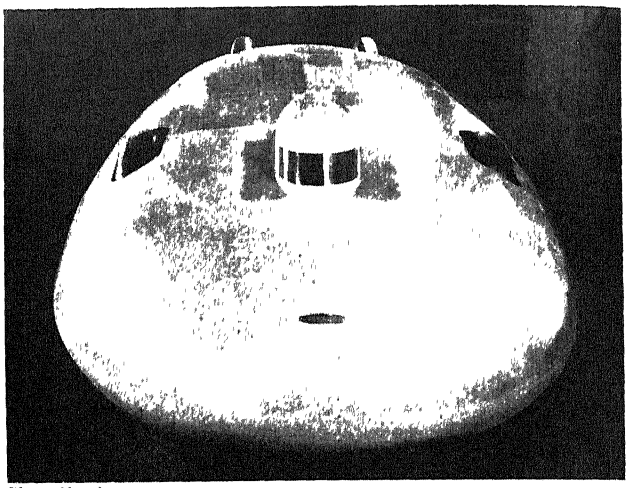
MOTOR RACING. The great sensation of 1938 was again provided by the English racer, Captain George E. T. Eyston, who, after beating his last year's world record (see *Ency. Brit Book of the Year*, 1938, p. 426) in August, had the record taken from him in September, and regained it next day. The racing again took place on Bonneville Salt Flats, Utah, U.S.A ; on Aug. 17, in his eight-wheeled 6,000-h.p. racing car " Thunderbolt", Eyston attained the new record of 345·49 m p.h. ; on Sept. 15 this was surpassed by his compatriot, Mr. John R. Cobb, who reached 350·2 m.p h. in his four-wheeled 2,500-h.p. Napier-Railton , but on the 16th Eyston did the northward run at 356·44 and the southward at 358·57 m.p.h., thus averaging 357·5 m.p.h., or about 10·045 sec. for the mile.

The British Empire Trophy (200-metre handicap), for which twenty-two British, French, and Italian cars entered,



Keystone]

CAPT. G. E. T. EYSTON'S " THUNDERBOLT ", IN WHICH HE MADE A NEW RECORD OF 357·5 M.P.H. ON BONNEVILLE SALT FLATS, UTAH, U.S.A., AUG. 16, 1938



Planet News]

MR JOHN R COBB'S NAPIER-RAILTON, WHICH REACHED 350 2 M.P.H. ON BONNEVILLE SALT FLATS, UTAH, U S.A.

was won by C. J. P. Dodson (Austin Seven) at Donington Park in April at 69·92 m.p h., " B. Bira " (E.R.A) being second at 73·72 m p h. The British Trophy (Brooklands, Aug 1) and the Imperial Trophy (Crystal Palace, Oct. 8) were both won by G E. Abecassis (Alta). In the International Grand Prix, held at Donington Park in October, the winner was the Italian Nuvolari (Auto-Union) at 80·49 m.p.h , followed by H. Lang (German) and R. J. B. Seaman (British), both driving Mercedes-Benz. Mr. Seaman had previously (July 24) won the German Grand Prix at Nürburg Ring, H. Lang being second out of a field of twenty, only nine of whom finished. The Grosvenor Grand Prix, raced at Capetown in January, was won by Earl Howe (E.R.A.) at 74·72 m.p.h., the Italian Pietro Taruffi (Maserati) being second at 74·55 m p.h. In Italy the Mille Miglia race on the open roads, at which speeds of from 100 to 120 m.p.h. have been reached, was finally suppressed as a result of the death of twelve persons and injuries to many others during the twelfth of the series, held in April.

In the United States, Floyd Roberts won the Indianapolis Speedway 500-mile classic at a record speed of 117·20 m.p.h. Chet Gardner was killed early in September during a time trial at the Flemington, N.J , fair grounds. Jimmy Snyder of Chicago won the national 100-mile dirt-track championship before 70,000 at the Syracuse fair grounds. Midget auto racing continued to prosper in the United States. More than 50 tracks were active during the year, six of them forming an Eastern circuit and operating under A.A.A. sanction.

MOTOR TRANSPORT. At the beginning of 1938, there was estimated to be 43,124,000 motor vehicles, other than motor bicycles, on the roads of the world, an increase of 6·2 per cent. Preliminary estimates indicate that at the close of the year the number had increased to some 45,500,000. The percentage growth tends to fall steadily, but the increase in actual numbers is not varying so much from year to year. The United States of America continues to have overwhelmingly the largest numbers and still accounts for about seventy per cent of the ownership. The following table shows the motor vehicles registered in the principal countries at the close of 1937.

This table includes all countries with 250,000 motor vehicles or more, and it may be noted that the Argentine Republic comes into this category for the first time. The exceptional position in Soviet Russia, where private cars and taxis constitute only one quarter of the total motor

	Private Cars and Taxis*	Goods Vehicles and Omnibuses	Total
United States	25,738,000	4,230,000	29,978,000
Great Britain	1,834,000	575,000	2,409,000
France	1,650,000	550,000	2,200,000
Germany	1,108,000	413,000	1,521,000
Canada	1,104,000	247,000	1,353,000
Australia	520,000	230,000	750,000
Soviet Russia	147,000	433,000	580,000
Italy	329,000	122,000	451,000
Union of South Africa	282,000	42,000	324,000
Argentine Republic	203,000	65,000	268,000

* Motor-bicycles are excluded.

vehicles, may eventually become normal as now they are increasing much more rapidly than the goods vehicles.

In relation to population there is now one motor-vehicle for every 47 persons, whereas ten years ago there was one for every 64 persons The United States still heads the list with 4·4 persons per vehicle followed by New Zealand with 7 persons, and Canada with barely 9. European countries are headed by France with 19; Great Britain 20; Denmark 26; Belgium 40; Germany 45. If motor bicycles were included Great Britain would show the greatest development of European countries.

The activities of the road motor vehicle continue to expand in all countries, and there has been no cessation of effort to find the solution of the problem of division of function between road and railway transport. The regulation which has taken place has resulted in better organization, a greater stability, and an increased sense of responsibility in the road transport industry. This is more general in the passenger than in the goods section, but both are affected. The result is shown in a great development of regular services, and a lessened number of bankruptcies amongst operators.

The regulation must still be described as largely experimental, and so is in a continual state of flux. In the United States it is proposed to extend the authority of the Interstate Commerce Commission to road transport as well as railway transport. The number of the commissioners would be increased by three to enable this to operate. The experience of the Northern Ireland Board does not give encouragement to those who advocate nationalization. Its operations continue to result in heavy losses, and a commission has been appointed to inquire into the causes and recommend remedies. An investigation made earlier in 1938 shows that a large part of the failure is accounted for by parties carrying their own traffic being free from regulation as to hours, wages, and conditions of service of the workers, whilst the Board is required to observe certain standards. Initial mistakes were made in valuing the firms taken over by the Board. The values were fixed on the basis of profits made when very long hours were being worked and very low wages paid. As the result considerable sums were paid in excess of the value of the firms, when these sweated conditions of labour were done away. No material change has taken place in South Africa, where a large part of the road transport is conducted by the state-owned railways, other parties being limited or excluded.

France has been making great changes, and has, like Germany, distinguished between short- and long-distance haulage. Short-distance road services have been defined as the conveyance of goods by a public service, when such goods are loaded and unloaded either in one *département* or in two adjoining *départements*. Detailed records must be kept in the latter case of the goods and their carriage, as also in all cases where the distance exceeds 100 kilometres (62 miles), when the rate charged must also be recorded. There is to be no rate regulation of short-distance services In the case of long-distance, which cover all other services, new licences are to be issued, and they will only authorize the continuance of those services which were in operation on April 21, 1934. An exception is made in the case of services started after that date to replace others abandoned owing to the granting of competitive rates by a railway, but then only if recommended by the Higher Transport Council. For purposes of rates, goods are divided into three classes, the conveyance charges for which are as follows:

Class I 60 centimes per ton-kilometre (about 1·3*d*. per ton-mile); Class II. 50 centimes per ton-kilometre (about 1·1*d*. per ton-mile); Class III. 40 centimes per ton-kilometre (about ·9*d*. per ton-mile).

These rates are considerably lower, often half, the railway class rates, but the railways carry the major part of the traffic at exceptional rates, and the latter do not appear to differ much from the road class rates. To maintain this position, to the road conveyance rates must be added cartage charges at the railway level where such exist, otherwise charges of 10 francs per ton with an addition of 10 francs per ton-kilometre for the distance between the point served and the nearest railway station. In addition to the three classes, separate rates are prescribed for (*a*) large animals, (*b*) small animals. The intention is to end road-rail competition in rates for long-distance traffic, and make the competition one of service only. Road-hauliers' associations are to be formed, membership of which will entitle the road haulier to lower rates of taxation. These associations are to assist in drawing up rates and in checking the application by its members of the rates, to keep records of long-distance traffic handled by its members, and generally to assist in seeing the regulations are observed.

Great Britain. The growth of motor transport in Great Britain has continued during 1938, but at a slower rate. At Nov. 30, 1938, the number of vehicles including motor-bicycles licensed was 2,849,057; of which 1,819,376 were taxed on horse-power; 370,240 were motor-bicycles, and 483,865 goods vehicles. The most notable increase, as in 1937, is in the 10-h.p. class, which will soon displace the 8-h.p. class from the premier position. The decline in motor-bicycles continues, a decline having now taken place for nine years in succession.

In the case of public passenger vehicles the seventh annual report of the Traffic Commissioners stated that in the year ending Dec. 31, 1937, the number of operators declined by 218 to 4,798, whilst the vehicles owned at 49,574 showed an increase of 1,537 with an average of 37·01 seats per vehicle, an increase of ·97 seats. The passenger journeys numbered 6,664 millions compared with 6,426 millions in the previous year, an increase of 3·7 per cent. The receipts were £67·6 millions, an increase of 3·8 per cent. The major part came from stage services—£59·1 millions, an increase of 3·2 per cent. However, express services receipts at £2·5 millions increased 5·1 per cent; excursions and tours yielded £2·2 millions, an increase of 8·6 per cent, whilst contract services earned £3·8 millions, an increase of 10·7 per cent. The control of fares for stage and express services is considered an element in causing the greater increase from contract services. A steady fall in the average receipt per passenger journey, outside the London Passenger Transport Board's area, is taking place as the following figures show: 1934–35, 2·75*d*.; 1935–36, 2·68*d*.; 1936–37,

2·59*d*. and 1937–38, 2·57*d*. The receipts per vehicle-mile show a rising trend: 1934–35, 10·31*d*.; 1935–36, 10·42*d*.; 1936–37, 10·49*d*., 1937–38, 10·85*d*.

The toll of accidents, deaths, and injuries on the roads has continued unabated. The total casualties for the year 1938 were 6,595 persons killed and 226,854 persons injured. The former is an increase of five, and the latter of 499, though the injured are less than in 1936. Pedestrians killed in 1938 numbered 3,023 and those injured 74,435—45 and 1,575 respectively more than in the previous year. The cyclists killed numbered 1,392 and those injured 65,745, showing decreases of 29 and 1,959 respectively. As it will be seen, these two classes account for approximately two-thirds of the killed and injured. There is one slight improvement in that the seriously injured fell by 1,435 to 50,977 persons, but it is a small matter in a bad record.

Legislation followed the report of the Bailhe Committee on hours, wages, and conditions of service in connexion with goods road motor transport, but the report on services and rates made by the Transport Advisory Council has merely been followed by referring the issue of rates to the industry with a request for local schemes of rates to be prepared. Meantime the position *vis-à-vis* the railways has become so acute that the railways have asked to be relieved from their existing rates regulation and given a "square deal". This has been referred to a traffic advisory committee, and may prove the prelude to control of goods rates in road transport.

Under the Road and Rail Traffic Act, 1933, the periods for "A", "B", and "C" licences for goods vehicles were fixed at two, one, and three years respectively. The shortness of the periods has been a source of difficulty to the operators, introducing a serious element of uncertainty in their business. By Goods Vehicles Provisional Regulations, 1938, the periods have been increased to five, two, and five years respectively. This section is still organized as a small-scale industry for the most part, the average number of vehicles per "A" licence-holder being 3·4; per "B" 1·6; per "C" 1·9. Actually 86 per cent of the "A" licence-holders own four vehicles or less and 97 per cent of the "B". (W. T. St.)

MOTOR VEHICLES. The 1939 model year began in England with the Earl's Court show during October and in the United States with the New York show in November. The American automobile industry advanced the show date from Jan. 1 to November in an attempt to spread employment over more months of the year. This was successful from its inception and was continued for the 1939 show. The previously slack months of September to December have now become periods of high output.

The motor industry, in the introduction of its 1939 models, offers improvements in its products which are the result of engineering development and research. The new models showed many engineering and appearance changes. Trends in design were continued and extended. Performance was somewhat increased, although customer demand is not for material increases in performance factors. An average maximum speed of 85 miles per hour is deemed satisfactory for the present. Engineering effort has been spent on safety, ease of operation, riding comfort, economy, and appearance. In many models weight has been reduced materially, giving increased economy and performance.

From the appearance standpoint, American cars have almost all abandoned the radiator jacket and grille. Air is taken through low openings near the front splash apron. English manufacturers prefer to keep the identity of the radiator. There has been an extension of the trend toward building a motor-car to fit the passengers instead of building the car and finding a place for the occupants afterwards. Finishes have been improved and new colours have been developed.

The roads and highways continued to receive governmental attention in most countries. Plans for high-speed super-highways were studied in many places. At present the roads of the leading countries are: U.S.A., 5,600,000 miles; France, 465,000 miles, Germany, 250,000 miles; Great Britain, 210,000 miles; and Italy, 125,000 miles.

Passenger Cars. The appearance of all models was radically changed. Bodies are lower, wider, and roomier, with better vision. Corner pillars have been narrowed and wind-screen glass increased in many instances to give an increased range of vision and to eliminate "blind" spots. Nearly all bodies are of steel construction with steel tops. In England the unit construction of body and frame has found additional adherents, while in the United States one manufacturer has continued to use this method of construction. In many models running-boards are eliminated or are optional. The practice of mounting headlamps in the front fenders has been adopted by many designers in the United States and on the Continent, and one English car is so built. Luggage space in the rear of sedans has been increased and concealed door-hinges have been adopted.

In the inside of the body, knobs and extensions have been recessed to prevent injury to the passengers. Plastics are used extensively for knobs and decorations. Both in England and the United States, ventilating, heating, and wind-screen defrosting have received added attention. Several manufacturers have well-designed heating systems built into the body. In the United States all automobiles have provision for installing radios. The four-spoked steering-wheel has almost disappeared. With instruments mounted directly in front of the driver, steering-wheels are made with two or three spokes so as to give better vision of them.

In England emphasis has been put on increased economy in engine improvements. Cylinder wear has also been a problem that has received attention. New materials for cylinders, better-finished surfaces, and more adequate lubrication have done much to eliminate this difficulty. Engine powers are not materially different from previous models. In the United States several new engines have appeared and many re-designs and engineering changes have been made. Compression ratios have been increased, which, along with other changes, has resulted in increased power output. Compression ratios of 6·5 to 1 are used in some instances. One American stock car continues the use of a centrifugal supercharger as optional equipment. All engines are mounted on flexible supports, usually rubber, to eliminate vibration.

The single-plate disc clutch is used almost exclusively. Several additional American cars have a disc spring type clutch.

The synchro-mesh transmission is still almost universally used. In most American cars the gear-shift lever has been removed from the floor and placed on the steering-column below the wheel. The lever is connected to the gear-box by a linkage and the shift is the conventional H movement. One car provides a vacuum-operated shifter and another an electrically-operated shifter. The parking brake lever has also been removed from the centre of the floor and placed under the left side of the cowl. The front floor is

then unobstructed. A number of cars are provided with an overdrive for country cruising. Means of cutting out the automatic operation of the drive is now provided. One car retains an automatic transmission as optional equipment. Another car may be equipped with a fluid flywheel as special equipment.

Almost all American and many British cars use four-wheel hydraulic brakes. Cast-iron drums are also much used to give freedom from scoring and long life.

In England the predominant rear-axle type is the spiral bevel gear drive with a few hypoid and worm gears in use In the United States the hypoid gear predominates. The hypoid gear is used to allow a lowering of the body without introducing drive-shaft tunnels. These hypoid gears require special hypoid gear lubricants.

The majority of English cars utilize four semi-elliptic leaf springs, although several new independent front-wheel suspensions are being built. On the Continent and in the United States the majority of passenger cars have independent front-wheel suspensions, using coil springs Several new rear coil spring suspensions have appeared in the 1939 models Most cars have shock absorbers and a means of preventing excessive roll on curves. In general, American spring rates have been lowered to provide a smoother-riding vehicle. To obtain the better ride without bumping, variable-rate springs are used in mass-production cars. Rubber bushings are used in many places on the chassis where movement is small and lubrication might be neglected.

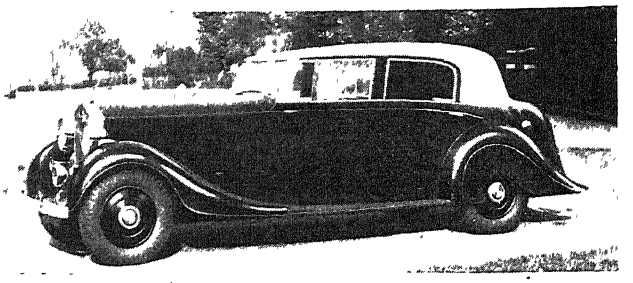
Special equipment is offered in many models. Several manufacturers supply sunshine sliding roofs on sedans as optional equipment. Automatic raising and lowering of a convertible coupé top by vacuum cylinders is offered on one model. Several models may be equipped with anti-back-up devices. One make of car has a directional signal as standard equipment; another has a safety light on the speedometer which glows green up to 30 m.p.h., amber from 30 to 50 m.p.h., and red above 50.

Lorries and Buses. Lorries have shown great improvement in the 1939 models. Appearance has been given greater consideration, especially in delivery units. Many models have been shown with stream-lined design and finish equal to that of passenger cars. In the United States, more cab-over-engine models are offered. This construction gives more load space without increasing the length of the vehicle.

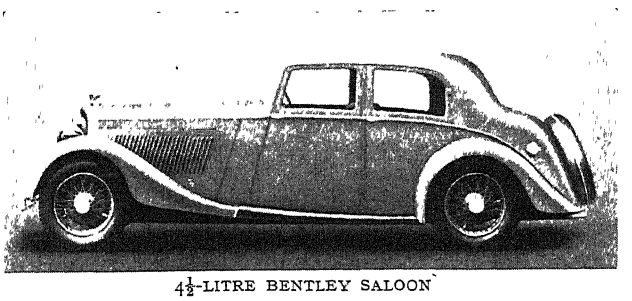
Many new Diesel-powered lorries have been introduced in the United States. This trend was started in Europe a number of years ago, where fuel costs are several times that in the United States. At present Diesel engines on both sides of the Atlantic are limited to large lorries in heavy service. One line of American lorries is powered by a light-weight two-stroke cycle engine. Other Diesel lorries use the conventional four-stroke cycle engines. Where the fuel situation is acute in some European countries, serious attempts have been made to use producer gas and other locally obtained fuels to operate lorries.

But transport has been growing in importance in all countries and buses have been greatly improved in appearance and comfort. There is a decided trend toward rear-engine position. Some long-distance U.S. bus lines have installed complete air-conditioning systems with air cooling and dehumidification for summer comfort. Many bus manufacturers now offer Diesel-powered buses.

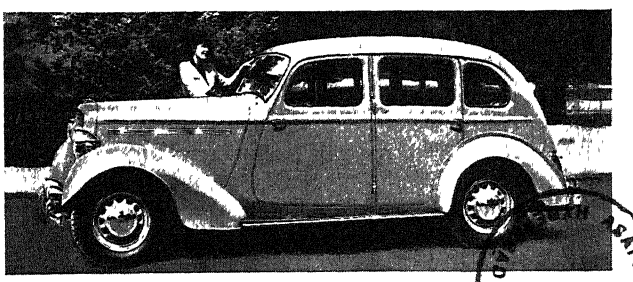
BIBLIOGRAPHY. *S.A.E. Journal*, monthly publication of the Society of Automotive Engineers (New York); "Facts and



40/50-H P ROLLS-ROYCE ALL-WEATHER



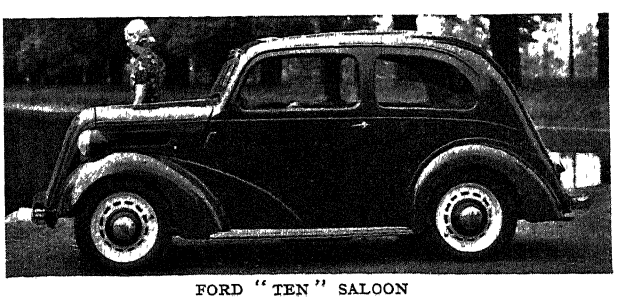
4½-LITRE BENTLEY SALOON



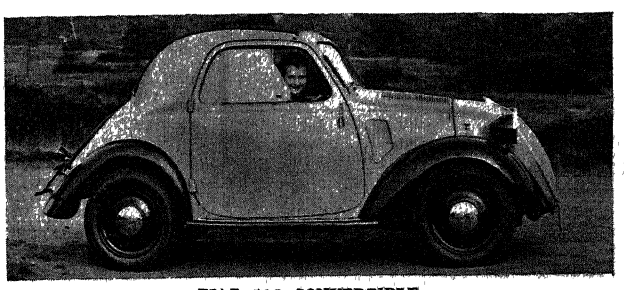
HUMBER SNIPE TOURING SALOON



SUNBEAM-TALBOT " TEN " SPORTS TOURER



FORD " TEN " SALOON



FIAT 500 CONVERTIBLE

Figures on the Automobile Industry", annual booklet by the Automobile Manufacturers Association (Detroit, Mich.); "Accident Facts", annual booklet of the American Safety Council (Chicago); *The Automobile Engineer*, monthly publication of the Institution of Automobile Engineers (London) (C. F. Ke.)

MOUNTAIN CLIMBING. In the Alps there were two particularly outstanding feats of mountain climbing in 1938—the ascent of the Eigerwand face of the Eiger by a German-Austrian party of four climbers, and the successful attack on the northern cliffs of the Grandes Jorasses by three Italians. The Eigerwand was the last and greatest Alpine precipice to yield to assault, and had slain a dozen of its assailants. During the second day of the successful ascent this year, one man was injured by an avalanche that completely submerged him, and at the second bivouac many avalanches poured down over the climbers' heads. On the third day snowfall was continuous, but by four o'clock the party reached the summit, and on their way down by the ordinary route encountered the rescuers who had come up to look for them.

The Italian ascent of the north face of the Grandes Jorasses was another desperate performance of the same kind. For the first time, two Germans, in 1935, had succeeded in storming this terrible wall after twenty-six other competitors had failed with considerable loss of life. The Italian expedition completed the history of the campaign by climbing up directly to the highest peak, instead of striking the summit-ridge at a slightly lower elevation as their predecessors had done. In regard to both the Grandes Jorasses and the Eiger, the climbers may be said to have engineered their way up by using hammers and iron pegs.

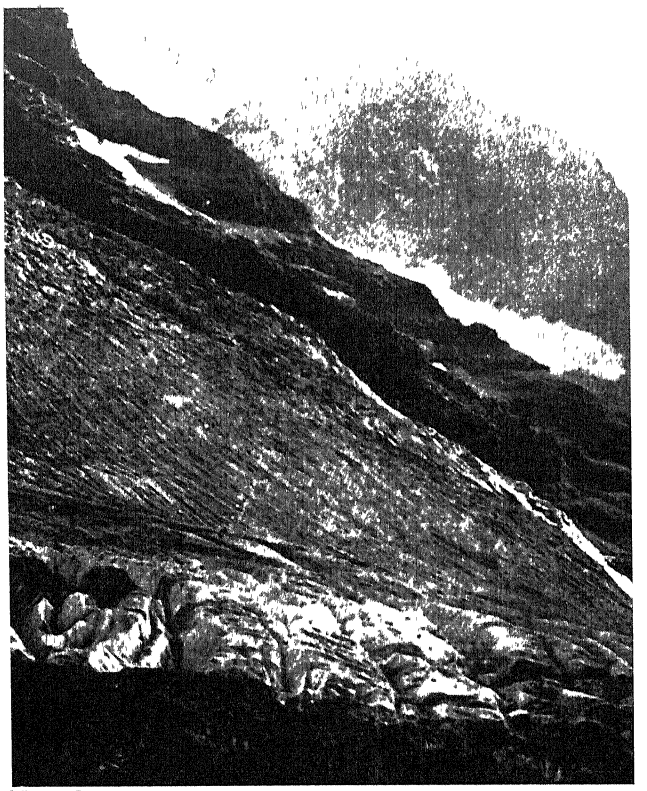
Now that the last great climbs in the Alps have been accomplished, we must look to the Himalaya for important achievements in mountaineering. The attempt on Everest, it is true, has been a disappointment. Though the small expedition this year was probably as efficient as any of its predecessors, the weather was even worse than ever before, and made high climbing impossible. The fact is that the more we learn of the weather that surrounds this great mountain, and the technical difficulties that defend the last thousand feet, the poorer seem the chances of success.

In the Karakorams, on the other hand, an American expedition succeeded in reaching 26,000 ft. on K.2, the second or third highest mountain in the world, with a reputation for utter inaccessibility. This was probably the finest mountaineering achievement of the year. Another expedition (English) made a very spirited attack on Masherbrum, the great Karakoram peak of 25,660 ft. They reached a height of about 25,000 ft., but unfortunately some of the party were severely frostbitten.

See *Alpine Journal*, No. 257 (1938 season). (C. F. Me.)



Keystone]
THE FOUR GERMAN CLIMBERS WHO CLIMBED THE EIGERWAND FACE OF THE EIGER IN SWITZERLAND, AFTER THEIR FEAT, JULY, 1938



[*Keystone*]
THE EIGERWAND FACE OF THE EIGER, IN THE SWISS ALPS

MOZAMBIQUE. Portuguese colony in East Africa, the greater part a state-administered province, but 51,000 sq. miles administered by the Mozambique Chartered Company. During 1938 accumulated financial surpluses provided the basis for a fund of 300,000 contos for public works. This fund will pay for the three new railways of Tete, Rio Lurio, and Nacala; the great irrigation works in the Limpopo and Umbeluzi valleys; and the vast network of agricultural and livestock stations.

The Province of Mozambique witnessed a change in its governorship during the year. Colonel José Cabral, who was Governor-General for twelve years, was transferred to Portuguese India. He was succeeded by Dr. José Nicolau Nunes de Oliveira, who was formerly a provincial governor.

As was the case in all Portuguese colonies the budget for Mozambique again showed a surplus, as did also the Public Accounts for 1937, which were closed in 1938. Economic life followed a normal and progressive course, the only shadow being that prevailing international unrest.

Area and Population:
Area 297,735 sq. miles.
Population (Census 1930) 4,006,011 (Europeans 23,131).
Chief Towns: Lourenço-Marques, Beira, Mozambique.

Governor-General. José Nunes de Oliveira.

Production:

Cane Sugar, refined (1936–37)	68,600 metric tons
Ground-nuts, export ,,	53,800 ,, ,,
Copra, export (1936)	34,200 ,, ,,
Gold (est. 1937)	330 kilograms

Overseas Trade 1937 :
Imports for consumption . . . $333,617,489
Exports, total $286,838,126
Communications 1938 :
Roads . . . . . 13,175 miles
Railways : total 1,043 miles, State 658 miles.
Finance :
Revenue, (est. 1938) 581,839 contos, (1937) 436,086 contos.
Expenditure, (est. 1938) 570,119 contos, (1937) 432,086 contos.
Public Debt, (Dec. 31, 1937) 155,500 contos.
Currency : 1 conto = 1,000 escudos ($).
Exchange Rate : $110 = £1 stg. ; 1 conto = £9 stg. approx.
Telephones : length of line, 10,180 miles ; number, 1,292.

MULTIPLE SHOPS AND CHAIN STORES. The proportion of Great Britain's total retail trade handled by multiple and chain shops has been expanding steadily for many years. Although no exact statistics exist, it is certain that during 1938 this expansion continued, but it was by no means uniform throughout every section of retail trade Where the multiple shop share of trade had already become considerable—for example, in the sale of footwear, grocery, or meat—its further relative development was probably small. Its greatest advance was in trades which previously it had not exploited to a substantial degree, and was achieved more by the variety chain shop than by the multiple shop covering only a single trade. It was probably most marked in the sale of women's clothing, where, in addition to an extension of multiple-shop organizations, the participation of variety chain shops also increased rapidly, particularly in the sale of simple outerwear such as knitted jumpers and cotton frocks. Chain store participation also rose substantially in the sale of cosmetics and toilet goods, and of drugs—whose sale by persons other than registered pharmacists has become possible on a much increased scale as a consequence of recent legislation.

The outstanding development of multiple-shop policy during 1938 was in the field of labour relations. Although Trade Unionism has always been weak in the retail trade generally, it had by 1936 gained some foothold in shops of leading grocery multiple companies; and, partly as a result of this, discussions were initiated between the Ministry of Labour, retail trade employers' organizations, and Trade Unions as to the possibility of statutory control of minimum wages and conditions of labour (*see* SHOPS AND DEPARTMENT STORES). In the course of these discussions, the Minister of Labour appealed for an extension of voluntary wage agreements to provide a background for subsequent statutory regulation. In Feb. 1938, such an agreement was concluded between the Shop Assistants' Union and the United Kingdom Association of Multiple Shop Proprietors (grocery and provisions), covering some 100,000 employees of leading grocery multiple firms. In Sept. 1938, the Union concluded a similar agreement with the Multiple Shops Federation on behalf of the leading footwear multiple firms. It is noteworthy that grocery and footwear are the trades in which multiple shops are most numerous and have been long established. (D. BA.)

United States. The corporate chain store in the U.S. did more business and made a smaller profit in 1937 than in 1936. Partial and reliable estimates for 1938 would indicate : (1) that among the corporate chains the percentage of profits to sales make a somewhat poorer showing for 1938 than for 1937, and (2) that while total retail sales fell below the high levels of 1937, the decrease in corporate chain-store sales was less than the decrease in the sales of independents.

The corporate chain continued to adjust its operations to restrictive State and Federal legislation resulting in higher wage and tax costs and fewer special discounts. It had also to adjust them to the increasing merchandising efficiency of the " voluntary " chain, and, particularly in the food field, to the severe price competition of independent " super-markets ".

The most significant anti-chain legal proposal of 1938 was the Federal " death sentence " corporate chain tax measure, H.R. 9464, introduced into the 75th Congress by Representative Wright Patman. The corporate chains sought aggressively to influence public opinion unfavourable to the Patman proposals. In some instances, these 1938 efforts signalized sharp changes in chain-store public policy.

But in spite of growing opposition, Patman adherents contend that a Federal anti-chain tax bill can be passed in the 76th Congress. During the year the corporate food chains continued to weed out unprofitable local branches and to establish self-service or semi-self-service " super-markets ". In October the Super-market Institute estimated the existence of about 5,000 true " supers " in the United States, of which 3,500 are independents and 1,500 corporate chain " supers ".

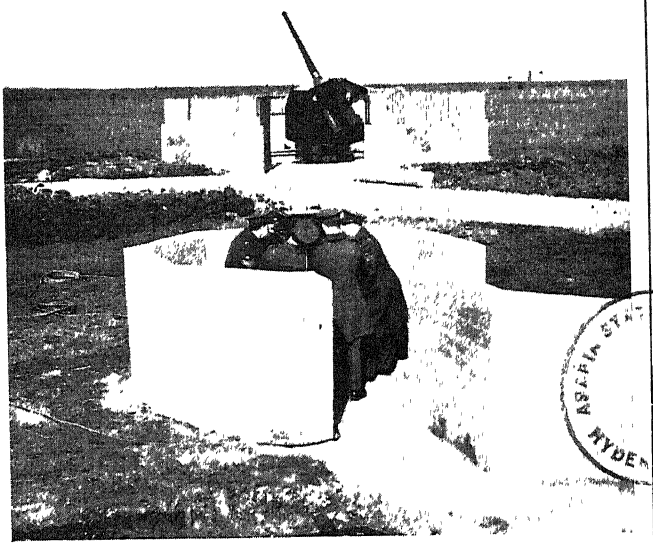
Canada. Chain-store taxation appeared for the first time in Canada in 1938. In May, Montreal adopted a tax that imposes the high rate of $1,000 per store on all corporates operating over 10 stores. Several other municipalities imposed annual taxes of $300 per store, and Toronto's Board of Control was considering a similar rate for chains that operate over 200 stores.

British Columbia became the first Canadian province to enact a fair trade act (the Commodities Retail Sales Act) legalizing voluntary price-fixing at retail and containing a " non-signer clause ", and an unfair trade practices act (the Food Products Minimum Loss Act) which forbids sales below cost.

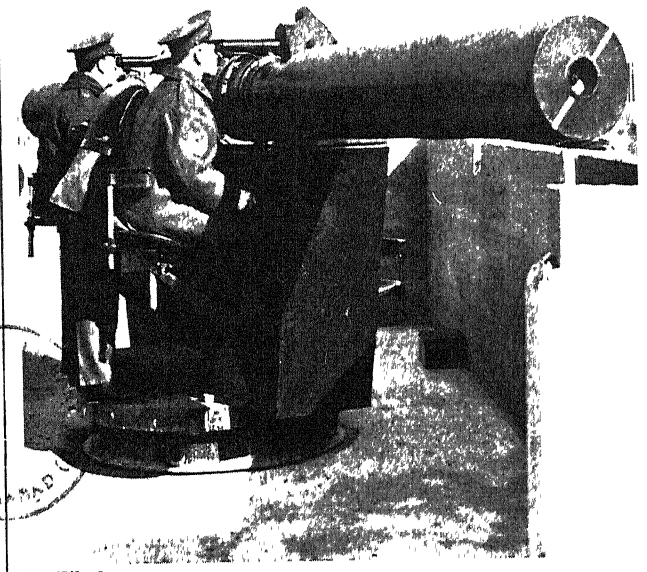
The food chains are considering the establishment of modified " super-markets " in Montreal. Nevertheless, there has not as yet been any significant development of " super-markets " in Canada, either on the part of the corporate chain or of independent distributors, probably because of a limited use of the automobile by consumers and because of a definite insistence upon " convenient availability ". (*See* also RETAIL SALES.)

MUNITIONS OF WAR. Munitions, and again more munitions, was the war-cry for 1938. And more were made. Yet, despite almost superhuman efforts everywhere exerted to meet the demands for instruments of offence and defence, it is reported that, during the Czechoslovak crisis in the late summer, less than 100 anti-aircraft guns were available for the defence of the entire London area, and of the five million souls in Paris, only the State officials had been supplied with gas masks.

Similarly, the United States, commencing to take stock after its usual post-war lethargy, discovered that the sum of $18 millions which it had appropriated toward the procurement of certain elemental items necessary to arm the " Initial Protective Force " of 400,000 men (Regular Army and National Guard) on which it must rely during the early phases of any national emergency, was just $142 millions less than the full amount needed to accomplish this. It found itself in possession of exactly one anti-aircraft gun of latest and most approved type, and an equal number of anti-tank weapons of like category—its Regular Army 35 per cent (the National Guard fifty per cent) short of the proper quota of motor vehicles, its six manufacturing arsenals



Fox Photos]
MEN AT WORK ON THE PREDICTOR OF ONE OF THE BRITISH 4.5 ANTI-AIRCRAFT GUNS, SEEN IN BACKGROUND



Fox Films]
THE RANGE-FINDER FOR THE BRITISH 4.5 ANTI-AIRCRAFT GUN

capable of producing a scant ten per cent of wartime needs, its field artillery equipped with but two really modern 105-mm. howitzers and four 155-mm. guns of equal status, and with but 104 of its 3,000 "75's" fitted with up-to-date carriages; its regimental quotas of 81-mm. mortars incomplete by 75 per cent, and its regular personnel protected by one gas mask for each four men, with eight of these available for every 100 members of its National Guard.

To offset in some measure these unhappy figures, however, were others more encouraging. Thus it learned that the production facilities of over 20,000 civilly operated factories had been analysed under its War Department Industrial Mobilization Plan, and detailed arrangements completed with 10,000 of these for the wartime manufacture of some 7,300 of the 7,500 different items required to supply an army, once hostilities commenced. Further, $10 millions had been appropriated (to be expended over a five-year period) to educate civilian plants in fabricating some fifty of the remaining 200, each of these so strictly military in nature and employment that its quantity production cannot be undertaken without previous training in the art. And while this represented but a tithe of the sum necessary to make this education complete, it constituted an advance so real, as compared with the chaos due to lack of planning which prevailed in the World War period, that it remained no small cause for satisfaction.

Thus the situation of one of the great democracies, and those of its fellows varied only in degree. Meantime the totalitarian States—unhindered by the necessity of inquiring of their industrialists as to whether they could and would produce this or that—gave orders, and took deliveries. And the taxpayer, the world over, was realizing more and more that munitioning is an expensive pastime. The modest 10,000-ton £600,000 battleship of the '90's is now replaced by a £14 million 35,000-ton colossus, the rotating parts of a single turret of which weigh 1,500 tons—equalling the displacement of a modern destroyer. Even the humble shoulder rifle of the American "doughboy" now represents an investment of $104 as against the $12·50 which the type it is now supplanting cost in pre-War days.

Considering separately certain aspects of the munitions situation, we find the following facts:

Aviation. Speeds of bombers and pursuit planes increased, the former proportionately more so than the latter. Figures of 360 m.p.h. are no longer unusual. By way of size, the U S.A. acquired a thirty-ton "Super Flying Fortress" (and had fifty "Flying fortresses", only less powerful than the "super" type, building or in service). Great Britain boasted a forty-ton flying boat, and Russia a six-engined behemoth. Germany evinced much interest in the discovery of helium in Brazil in view of her inability longer to secure supplies of this in the United States. She was likewise said to be exerting every effort to develop a satisfactory steam-powered plane. This would combine the advantages of low-cost fuel, a relatively silent motor, and immunity from the effects of remotely-controlled rays designed to dislocate electrical ignition systems. The "noiseless" motor remains, however, a doubtful asset, since the propeller itself creates sufficient sound to activate detecting mechanisms at great distances. Germany again, having conceded Britain a 3 : 1 naval ratio, was said to have proposed as between these two countries a 3 : 2 aeroplane ratio in her favour. The U.S.A. gained a lead over its fellows in the development of a superior aeroplane motor fuel of 100 octane rating. Its Navy announced the intention of re-entering the lighter-than-air field with a new airship of 1 million cu. ft. capacity, and an estimated length of 335 feet. At the same time it discarded, and its sister Army service adopted (for experimental purposes), planes of the autogyro type. A new aeroplane bomb, said to be of German origin, with liquid air as its explosive agent, was reported as under trial in Spain, with devastating results. By contrast, many measures and inventions designed to increase safety in flight were tested and adopted. Great Britain succeeded, after years of trial, in launching a smaller plane from the back of a larger, the latter in full flight. Trends were toward the increased use of metals in plane construction, with the all-metal plane not far off. Engine power ratings increased, and the number per plane diminished. Plane production was universally speeded, Germany heading the list with an estimated 400 planes monthly, and a claimed maximum capacity of 1,000 per month. Even the U.S.A. laid plans to double or quadruple its army plane programme of 2,320 planes by 1941, and discussed ways and

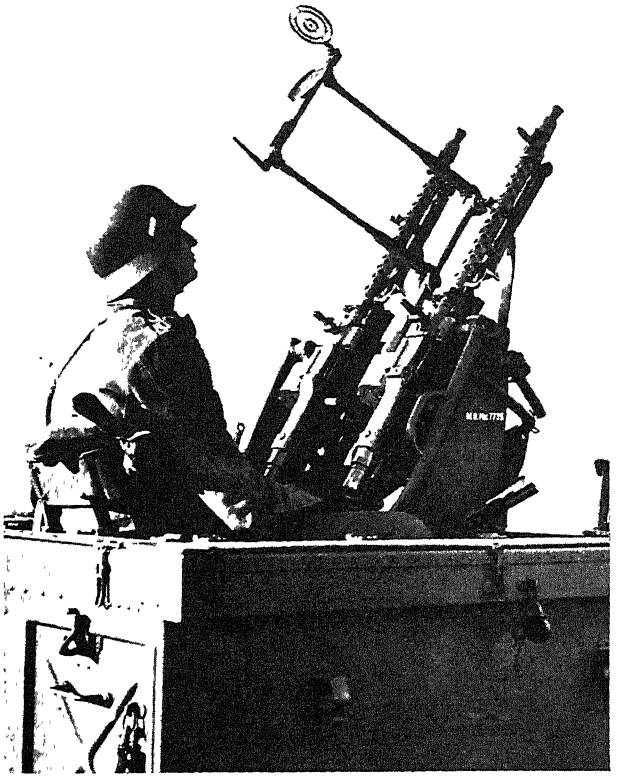
means of training annually some 20,000 civilian pilots (and a comparable number of aeroplane mechanics) to be available as a war reserve.

Anti-aircraft. A new anti-aircraft fire-control device permits "blind" firing of A.A guns. Three beams of light trace on a ground glass screen the speed, elevation, and direction of an observed plane (in combination with the usual listening devices now employed). Thus the position of an unseen machine may at any instant be definitely predicted, and the guns automatically and correctly pointed. Searchlights have succeeded in locating planes at altitudes of 24,000 feet, and appear uniformly successful up to 18,000 feet. The British "balloon barrage" (nets to entrap planes, suspended from captive balloons) underwent a test which was on the whole satisfactory. The effective range of A.A. guns has increased, as against individual targets, to 12,000–15,000 feet, while barrages may be laid up to 20,000–25,000 feet. The infra-red ray method of detecting oncoming planes (by the heat radiated from their motors) is now said to be effective at distances up to twenty miles.

Tanks. The light tanks employed in Spanish operations have proved defective, their thin armour being vulnerable to anti-tank fire from weapons of calibres as small as twenty millimetres. The trend continues towards more armour and less speed, informed observers now feeling that battle speeds will rarely exceed six miles per hour. Special-purpose tanks are looked upon with favour in several countries, *e.g.*: the wire-cutting tank (Poland); flame-throwing, smoke-producing, and bridge-laying tanks (Italy); amphibian tanks (Britain, France, Russia). Tank tacticians are divided into two opposing camps. One (French) holds that these instruments should never be employed independently of infantry support, the other (German) believing this to be practicable—and often advisable.

Anti-tank. All nations are exerting violent efforts to supply their troops with additional anti-tank armament. Thus France now employs some 30 A-T guns per division, Italy 32, Russia 82, and Great Britain 48. In the last-named country, however, these are augmented by one anti-tank rifle per infantry platoon (96 per division). These rifles, of twelve-mm. calibre, are said to be capable of penetrating the armour of practically any tank at 450 yards. The conventional anti-tank gun (as contrasted with the much lighter rifle just discussed) varies in calibre from 37 to 50 mm. with an average penetration of fifteen mm. of armour at 1,000 yards, and thirty mm. at 400–700 yards. Tank obstacles in the form of veritable pin-cushions of steel railway rails, set into the ground at crazy angles, form an element of the Maginot Line defences, according to recent reports. Behind these come a second similar installation, each with a mine, capable of disabling any tank, attached to its free end. One improvisation which has been quite successful in Spain involves the use of an ordinary glass bottle filled with petrol and covered with oil-soaked rags. The wrapping lighted, and the "grenade" dashed against the walls of a tank, some of the burning fluid frequently penetrates within and ignites the petrol supply.

Artillery. Germany set the military world agog when she paraded two new pieces of mobile artillery, one a gun of about 10 inches calibre, the other a gun-howitzer of approximately 21 centimetres. The former required five motor units to transport it in as many sections, at a road speed estimated at thirty miles per hour. With a barrel 40–45 feet in length, it was said to be capable of being set up for action in 1–2 hours, and to possess a range somewhere between 30,000 and 60,000 yards. The howitzer was rated as ranging some



Keystone]
GERMAN DOUBLE-BARRELLED ANTI-AIRCRAFT MACHINE GUN

17,000 yards. Meantime the U.S.A. developed, under a high degree of secrecy, two new heavy artillery units, an eight-inch railway gun with a reputed range of twenty miles, and a sixteen-inch coast-defence cannon carrying ten miles farther.

Infantry Weapons. The United States pushed production of its new Garand semi-automatic rifle, but even so had but 7,500 in hand at the close of 1938 Italy adopted a new short rifle of 7·35-mm. calibre, and the Scotti semi-automatic breech mechanism was found adaptable to the 7·9-mm. shoulder rifle of Germany and Czechoslovakia. This has a firing rate of 42–60 shots per minute, the breech remaining open after each discharge.

Chemical Warfare. British infantry fired full target training courses in gas masks during the summer of 1938. Russia developed a rubberized protective (anti-gas) cape for its soldiers which is now standard equipment. It is carried in the same bag with the gas mask, and can be slipped on in 2–3 seconds. Great Britain had 26 million masks available during the Czechoslovak crisis, and is producing these at the rate of 650,000 weekly.

Mechanized Vehicles. Trends are toward six-wheeled types, rather than four-wheeled, as more serviceable and capable of developing higher speeds on poor terrain.

Camouflage. A. Lett has invented a large fan of whalebone and lattice work for camouflage of the individual soldier. It is covered with vari-coloured materials, according to the season. Opening to a spread of $2\frac{1}{2} \times 5$ ft., it weighs two lb., and may be swung over the shoulder like a rifle. The unsuspecting do not recognize it at 150–200 yards, and the expert cannot pick it up with field glasses at 600–700 yards. (*See* also ARMIES OF THE WORLD; NAVIES OF THE WORLD; AIR FORCES; WORLD ARMAMENTS.) (C. GD.)

MUSIC. Much as a musician would prefer to regard his art in complete detachment from political currents, the situation in 1938 makes it almost impossible for him to ignore their influence. This takes two correlated forms: the displacement of distinguished composers and executants; and the limitations imposed by certain governments upon the freedom of the artist. The exodus of musicians from the area affected is by no means limited to the Jewish race, it includes many others whose political opinions are incompatible, or whose artistic heterodoxy is regarded as subversive ("cultural bolshevism"). An exhibition of "degenerate" music held in Germany in 1938 provides a clue to the definition of this category, which may be taken as including all who have the audacity to seek, or even to follow new paths. This exodus, which has scattered refugees in all musical countries, and nomads upon all musical highways, must inevitably influence the course of musical development if it has not already done so. It must hasten the assimilation of the new technical resources that have resulted from three decades of innovation, and their absorption into the musical vernacular. In a review of American composers Hermann Scherchen refers to a "supernational language which has assimilated all other methods of expression". Whether or not that be the goal towards which music is tending, the assimilation must inevitably be accelerated by the dispersal of pioneer musicians and consequent dissemination of their ideas. In any case their dispersal cannot arrest the progress of those forms of music which authoritarian countries officially consider obnoxious. It can only accentuate the isolation of the latter. Already contemporary German music is represented abroad almost exclusively by composers whose works Germany has banned. The limitation of the artist's liberty imposed by the *Reichsmusikkammer* was the subject during 1938 of controversy in the pages of the new *Revue Internationale de Musique*, published in Brussels. It would be manifestly unfair to leave out of account the idealism of its avowed objects, as explained by Dr. Fritz Stege. It is for instance undisputed that the level of public taste in entertainment music is low, but whether it can be raised by methods of paternal government remains to be seen. Even so docile a people as the Germans may prove reluctant to be entertained at the word of command. But the more significant the music the more dangerous is such interference. In the controversy the word *volksfremd* has been applied to the "advanced" music of recent years. It is argued that whereas the classics were *volksverbunden*, the most recent music is alienated from the people. But the contemporary audience of the classics was not the *Volk* in that sense of the word. It was an *élite*, drawn mostly from the landed aristocracy and the upper strata of the urban bourgeoisie. A Beethoven symphony was probably in its day as *volksfremd* as one by Hindemith is said to be to-day. The schism between entertainment music and significant music was already in existence. Schubert was the last composer to bridge it. If it is again bridged in our time it is more likely to be by musicians such as Germany has cast out than by such as have had official approval.

If justification is needed for this preliminary excursion into extraneous matters it is supplied by such events as the production at Zürich in May of Hindemith's opera *Mathis der Mahler*, which cannot be performed in Germany; the withdrawal at Prague of Krenek's *Karl V* for political reasons after a single performance which, for the same reasons, the composer was unable to attend; and the vacillation at Dresden concerning Mohaupt's opera *Die Wirtin von Pinsk* (after Goldoni's *Mirandola*) The prospects of a new opera have steadily become more precarious in recent years. If in addition an incalculable political factor has to be taken into consideration, composers will lack any incentive to write them. This, of course, does not affect established opera, or those composers whose position is assured. Richard Strauss produced two one-act operas, *Der Friedenstag* (Munich, July 24) and *Daphne* (Dresden, Oct. 15), and is already engaged upon an opera on the Midas legend. Meanwhile his *Elektra*, after an interval, had been revived with much success at the Metropolitan Opera House, New York, in January, and at Covent Garden in May, the title role being taken on both occasions by Rose Pauly. Of other operas which have attracted attention in Germany should be mentioned *Peer Gynt* by Werner Egk, *Enoch Arden* by Ottmar Gerster; *Der Sohn* by David Lichius; *Schneider Wibbel*, a comic opera by Mark Lothar; *Odysseus bei Circe*, a satirical opera by Herbert Trantow; and *Das Brandmal*, a German version of *The Scarlet Letter* by the American composer Vittorio Giannini. Gian-Carlo Menotti's *Amelia goes to the Ball* was staged in English at the Metropolitan, and a Baltimore composer, Gustave Strube, produced an opera, *The Captive*. In London George Lloyd's second opera *The Serf* was produced at Covent Garden, but although the second act found favour, as a whole it could not be claimed a success, the stilted language of the libretto being one of the factors against it. From other countries come reports of operas which may or may not be lasting additions to the repertoire. One of the most promising is *Julietta*, Martinu's fourth opera, produced at Prague. Darius Milhaud's *Esther de Carpentras*, presented at the Opéra Comique, is frank *opéra-bouffe*. He is recently reported as engaged upon an opera on the subject of Medea. But side by side with these regular productions experiments are constantly coming forward. Kodaly's *Spinnstube* has been produced as opera, and Migot has composed *Rossignol en Amour*, of the nature of a cantata, but described as a chamber opera for three soloists, two pianos, and wind and string quintet. Whatever the musical importance of such works, their significance as symptoms is unmistakable. To compose a full-dress opera is a formidable undertaking. Composers in all countries are hesitating to face it unless reasonably assured of favourable conditions. They either experiment in less pretentious forms of opera, or turn to ballet as offering a more immediate incentive. Failing either they turn to other fields. The number of composers of serious attainments who have been attracted to the cinema is already considerable and is increasing year by year.

The world of ballet revolves round the Ballet Russe combine, and that in turn centres in the productions of Leonide Massine, the foremost choreographer of the day. Of these the year witnessed four, in London and in the United States: *Seventh Symphony* (Beethoven); *Gaité Parisienne* (Offenbach); *Nobilissima Visione*, or *St. Francis* (Hindemith); and *Bogatyri* (Borodin), the music of the latter being one of those composite arrangements, drawing upon the composer's Second and unfinished Third Symphonies and the Nocturne from his Second String Quartet. In Paris the earlier experiment *Icare* has been followed at the opera by *Le Cantique des Cantiques*, the music of which is contrived by Honegger on rhythms communicated by Serge Lifar. On the same stage has been produced Florent Schmitt's ballet-drama *Oriane et le Prince d'Amour*. Other productions of the year include *Trepak* by Alexandre Tcherepinne, presented in America by the

Mordkin ballet, and *Der Ewige Kreis* by Ottmar Gerster in Germany Composers have also been turning increased attention to the solo dance-scena Milhaud's *L'Oiseau* and Castelnuovo-Tedesco's *Nefertiti* are both described as being for orchestra and dancer. An appointment of some interest to ballet enthusiasts is that of Boris Romanoff who succeeds Georges Balanchine at the Metropolitan Opera House. The combination of ballet with opera presents thorny problems which are not exclusively choreographic

The spate of new music continues, and the tendency remarked in recent years to revert to classical forms is still paramount though actually the number of noteworthy symphonies may be less impressive. " First performances " being far too numerous for even a superficial survey, interest centres in the various festivals at which contemporary music, and particularly that of advanced character, is welcomed. Of these the most significant, because of the method of its organization, is that of the International Society for Contemporary Music, held annually in different countries. That for 1938 was the sixteenth since its foundation and took place in London The general impression was paradoxically that two generations had changed places. The standard of the music performed was high, but the provocative works came from composers of mature years, whereas the younger generation, from whom one is entitled to expect a challenge, were sedately working out their salvation with the inherited resources which had been enriched by their immediate predecessors. Thus Webern's *Das Augenlicht* and Bartok's Sonata for two pianos and percussion, whose composers were respectively 54 and 57 at the time of the festival, showed a spirit of adventure such as one sought in vain among composers in their twenties or thirties. These, with Krenek's Cantata, and Willy Burkhard's oratorio *Isaiah's Vision*, were the major successes of the Festival. At Venice, where 33 composers were represented (fifteen Italian, four French, two German, two Japanese, and one each from Great Britain, the U S.A., Brazil, Holland, Switzerland, Russia, Yugoslavia, Czechoslovakia, Poland, and Rumania), much the same impression was created, the Suite from Hindemith's *Nobilissima Visione* being especially acclaimed, and works by Poulenc, Conrad Beck, and Ibert commended. Despite the preponderance of Italians, this festival can claim to be both liberal and international in its choice of works. There were also international festivals at Baden-Baden, Düsseldorf, and Stuttgart at which the German contribution was naturally in accordance with official views but the choice of foreign works, though cautious, was less circumscribed than might have been anticipated from official utterances. On the whole, however, the annual festivals of the I S.C.M., of which the next is to be held at Warsaw, afford the most reliable criterion of contemporary creative efforts, and this in spite of the successive disappearance of the German and Austrian sections, and the German-Czech sub-section. Selection of works from the countries affected is now in the hands of the international jury The London Festival was preceded by a congress, " Music and Life, 1938 ", comprising two full days of fruitful discussions. Since the *Anschluss* there have been various projects the aim of which is to provide, in Switzerland or elsewhere, an alternative to Salzburg, but it would be premature to regard them as established. Meanwhile the Glyndebourne Opera House continues to flourish in the Sussex Downs. During 1938 Verdi's early *Macbeth* and Donizetti's *Don Pasquale* were added to the repertoire. A Festival of a special, not to say unique, kind is that held on South Mountain at Pittsfield, Mass , where in 1938 a bas-relief was unveiled of its founder, Mrs. Elizabeth Sprague Coolidge. The new works of the year to which she had supplied the incentive were string quartets by Webern, Louis Gruenberg (his second), and Frank Bridge (his fourth), and *Hagiographa* by Frederick Jacobi for string quartet and piano, comprising three biblical narrations, " Job ", " Ruth ", and " Joshua ".

For the rest it is impracticable to do more than mention, more or less at random, a few of the new works which attracted attention during the year In England, for instance, there was Alan Bush's Piano Concerto which, like Busoni's, has a choral Finale. The text is virtually a manifesto for " socialism in our time ", but the music, virile and concentrated, is neither better nor worse for this association with non-musical ideas , and in Edmund Rubbra's Second Symphony, the composer's passion for counterpoint is given free rein, whereby the lyrical impulse is somewhat overwhelmed. America has been extraordinarily prolific, and there is the authority of Scherchen, quoted above, for claiming that this fecundity has intrinsic significance. That many of the composers represented are American only by adoption is beside the point if, as Scherchen asserts, America is engaged in producing the supernational language of music. The Guggenheim Fellowship awards, four in number, include a Mexican, Carlos Chavez, and a negro, William Grant Still. Of the other two, David Diamond has produced a *Heroic Piece* which has been favourably reviewed. Other works are Emerson Whithorne's *Sierra Morena*; Harl McDonald's Fourth Symphony ; Bernard Wagenaar's Concerto for Flute, Harp, 'Cello, and Orchestra , and Edward Schneider's tone-poem *Thus Spake the Deepest Stone.* Darius Milhaud, most productive of French composers, has completed a Piano Concerto to be heard in Feb , 1939 ; Honegger has written incidental music to a play by Paul Claudel, *Jeanne d'Arc au Bûcher.* Incidental music has also figured in the output of the two leading Dutch composers ; William Pijper and Henk Badings having provided it for two plays by Joost Van der Vondel, the former for *Phaeton*, the latter for *Gysbrecht Van Aemstel.* Among noteworthy concertos are, for piano, those of Vladigeroff (Bulgaria), Anis Funeihan (U.S.A.), and a Ballad by Rangström (Sweden) ; and for violin those of Gunnar de Frumerie (Sweden) and E. B. Hill (U.S.A.) ; and an organ concerto by Marcel Dupré. A striking title is that of Florent Schmitt's *Suite sans esprit de Suite.* But this fortuitous enumeration can convey no idea of the musical activity that reigned in 1938.

A remarkable feature of the year was the almost simultaneous appearance of three compendious one-volume musical encyclopædias. The largest and most costly of them is the *International Cyclopedia of Music and Musicians*, edited by Oscar Thompson and published by Dodd Nead & Co., a volume of 2,287 pages. But the Macmillan *Encyclopedia of Music and Musicians*, edited by Albert E. Wier, does not lag far behind, with two million words. In comparison with these the *Oxford Companion to Music*, published by the Oxford University Press, is more modest, comprising no more than a million words but, apart from its great merits, it has the special quality that whilst those others are compilations from many authors, this is a monument to the industry of one man, Dr. Percy A. Scholes, who consulted advisors on special points, but wrote every word himself.

The obituary list of the year is as usual varied, ranging from Chaliapin who can be described, without exaggeration, as the most complete and perhaps the greatest operatic

artist of modern times, to two lay patrons of music, Adolph Lewisohn and Clarence H. Mackay, the former associated with the Stadium, the latter with the Metropolitan Opera and the Philharmonic-Symphony Orchestra in New York. England has lost Sir Richard Runciman Terry, an eminent musicologist; Sir Landon Ronald, conductor, composer and principal of the Guildhall School of Music; Dr. Cyril Rootham, composer and teacher; and Marie Wurm, the elder sister of Mathilde and Adela Verne. The passing of Albert Carré reminds one that he directed the Opéra Comique at the time of the historic premières of Charpentier's *Louise*, Debussy's *Pelléas et Mélisande*, and Dukas's *Ariane et Barbe Bleue*. Baron Hans Paul von Wolzogen, critic, author, and a famed wit, died in his ninetieth year. The Pontifical Institute of Sacred Music in Rome has lost its president, Dom Paolo Ferretti. And the world of piano virtuosity has lost Leopold Godowsky. (E. E.)

MUSSOLINI, BENITO (1883–), Italian statesman and dictator, played a large part in European politics during 1938. To the surprise of many he defended the absorption of Austria by Germany, explaining in a broadcast speech from the Chamber of Deputies on March 16 that he did so chiefly because the Rome-Berlin axis came before all, but also because the Austrians had shown no real wish for independence. A cordial exchange of telegrams between Signor Mussolini and Mr Chamberlain followed the signing of the Anglo-Italian agreement on April 16. Early in May Mussolini entertained Herr Hitler for a week with lavish display and exuberant hospitality on the part of the whole nation; and shortly afterwards, on May 14, in a speech at Genoa, he proclaimed the solidarity of the "German and Roman worlds", hailed the Anglo-Italian agreement, defended his policy of self-sufficiency, and said that Italy and France, in the matter of Spain, stood "on opposite sides of the barricades".



Associated Press]
MUSSOLINI BESTOWING A MEDAL ON THE WIDOW OF AN ITALIAN AIRMAN KILLED IN SPAIN. ROME, MARCH 28, 1938

During the Czechoslovak crisis of September Signor Mussolini's influence was, like Mr. Chamberlain's, cast on the side of maintaining European peace; on Sept. 15 he addressed an open letter to Viscount Runciman strongly urging a plebiscite; on the 18th, after Mr. Chamberlain's visit to Berchtesgaden, he said at Trieste that, while still hoping for peace, if hostilities broke out there need be no doubt on which side Italy would be; on the 24th, at Padua, he revealed the details of the Godesberg Plan; on the 28th, at Mr. Chamberlain's urgent request, he persuaded Herr Hitler to delay mobilization; and on the 29th he formed one of the "Big Four" at Munich who, at 1.30 a.m. on the 30th, reached agreement. His last act of international importance before the close of the year was his denunciation, on Dec. 17, of the Franco-Italian agreement of Jan. 1935 regarding Tunisia.

On the domestic side, Signor Mussolini on March 30 created the new military title of "Marshal of the Empire" for the King and himself, and announced that in time of war he would be in supreme command, he founded two new towns—Pomezia, the fifth, and last, to be built on the Pontine Marshes, on Apr. 25, and Carbonia, on a coalfield near Cagliari, Sardinia, on Dec. 18; and during the latter half of the year his attention was much occupied by the racial question, one result of which was the inauguration of a campaign against the Jews.

MYSORE continued in 1938 to live up to its reputation as the most progressive of the Indian States: for the first time a woman was elected to its legislative council. The State has, however, set its face against political agitation, and the police had to suppress by force an attempted Congress meeting in a Kolar village. Bangalore, the modern capital of the State, has the largest cantonment in S. India, and is also distinguished as the seat of the Indian Institute of Science, which owes its foundation to the generosity of the Tata family. (ME.)

Area and Population:
Area 29,438 sq. miles.
Population (1931) 6,557,302.
Chief Towns: Mysore (107,142); Bangalore (306,470).

Ruler. Sir Shri Krishnaraja Wadiyar, G.C.S.I.

Language. Kannada.

Religion. Hindu.

Production 1936–37:
Gold mining, 30,000 employees; Silk, 60,000 cocoons sold.
Porcelain, sales Rs. 85,000.

Communications and Transport 1938:
Roads: State motor roads link up chief towns.
Railways, State: 732 miles open to traffic.
Motor vehicles licensed (Jan. 1, 1937): 2,855 cars and taxis, 1,182 commercial vehicles; 409 motor-cycles.

Finance 1937–38 estimate:
Revenue . . . . . Rs. 3,86,43,000
Expenditure . . . . . Rs. 3,85,84,000

Education 1936–37:
About 8,000 schools including 44 high and 358 middle schools.
Scholars, 312,000; University with colleges at Mysore and Bangalore.

Army 1936–37. Infantry, 870; cavalry, 630.

N

NANKING. The capture of the city by the Japanese in Dec 1937 was followed by a campaign of looting and destruction which continued throughout January; fires were still raging forty days after the Japanese occupation. A survey in April disclosed that 45 per cent of all movable property in the city had been looted, and that of 40,000 buildings, 12,000 had been destroyed by fire. The loss of property due to hostilities was estimated at £49 millions, while 42,000 unarmed people, thirty per cent of them women and children, were stated to have been killed since the occupation. The population of the city in 1938, estimated in 1936 as a million, had fallen to less than 300,000. Some Chinese bombing raids took place early in the year. In March a "reformed" government for Central China, with Japanese support, to administer Kiangsu, Chekiang, and Anhwei was set up at Nanking, with Mr. Liang Hung-chih as chief executive; in September this body was amalgamated with the pro-Japanese Peking government.

NANSEN OFFICE, THE. The Nansen International Office for Refugees grew out of the League of Nations' refugee work, which was begun in 1920, and, from the outset, was carried on by Dr. Fridtjof Nansen (see *Ency. Brit.*, vol. 16, p. 72) as High Commissioner. Dr. Nansen died on May 30, 1930, and on the following Sept. 30 the "Nansen Office" was constituted as an autonomous organization by the League, and under its auspices, to carry on this work on behalf of the Russian, Armenian, Assyro-Chaldean, and Turkish refugees, refugees from the Saar being added later.

The work was to be completed by the end of 1938 at latest; the League itself was responsible for the political and legal protection of refugees, the Office for the humanitarian side of the work, particularly for the collection of information regarding the material and moral condition of those concerned and for assisting them in finding employment and opportunities for settlement; and one of its important functions was the establishment of a provisional legal status for stateless persons by means of the "Nansen Passport" until such time as they were able to acquire definitive nationality. Besides an annually diminishing grant from the League, its relief work was financed by subsidies and gifts from governments, public and private institutions, and individuals, and from the sale of surcharged postage stamps in France and Norway, approximately £6,900 having been raised by this means between their introduction and March 31, 1938; in 1938, also, the Office was awarded the Nobel Peace Prize for 1937, valued at about £8,000. The Office assisted thousands of refugees, built schools and churches, conducted a children's home at Châtenay, near Paris, and a home for the aged at Nice, and assisted rest homes for incurables, hospitals, sanatoria, etc.

When the Nansen Office was finally wound up at the end of 1938, the number of refugees under its control (which did not include those from Germany, whose interests were separately supervised by a High Commissioner) had fallen to about 5,000; large numbers of Armenians had been settled in Syria, most of the Russian refugees in Turkey had been accorded Turkish nationality, and the refugees from the Saar had been accommodated in Paraguay, the Argentine, and France. On Jan. 1, 1939, Sir Herbert Emerson, G C I.E., governor of the Punjab from 1933 to Sept. 1938, took over for five years the High Commissionership of the League under the new scheme which has taken the place of both the Nansen Office and the High Commissioner for Refugees coming from Germany, the existing funds of the two organizations being transferred to their successor (L. H. D.)

NATAL. The principal city, Durban, is highly developed as a seaside resort, and its port, the second largest in the Union, is being enlarged at a cost of £1,500,000. Pietermaritzburg is the capital of the province and seat of the provincial council.

The sugar industry on the coast of the province is of first importance; in spite of increased consumption within the Union, it is still necessary to export over fifty per cent of the crop, which is possible only owing to the high internal price maintained through protection. Cattle, maize, and fruit are produced, and coal and iron mined. Whereas in the Transvaal and Cape provinces Indians are largely occupied in trade, in Natal over 20,000 are engaged in agriculture and there are 700 independent Indian sugar planters.

Eighty chiefs in Zululand retain powers of civil and criminal jurisdiction, and it is now proposed to extend the same powers to some 222 chiefs who at present have limited civil powers only. The council system has not extended to the native areas in Natal except in one instance, that of Msinga. (J. L. K)

Area and Population :

Area 35,284 sq. miles.
Population (est. June 30, 1938) 2,018,900 (European 196,600).
Chief Towns (E. = European pop.) Durban (259,606 (E. 95,033)), Pietermaritzburg (49,539 (E. 22,446)).

Production 1937 :

Coal (tons of 2,000 lb.)	4,095,185 tons
Cattle, number	2,464,510
Sheep, woolled, number	1,965,604

Communications and Transport March 31, 1937 :

Roads, 6,600 m.; motor services, 1,266 route miles.
Railways, Government . . . . 1,511 miles
Motor vehicles licensed (Dec. 31, 1937): cars, 4,873; buses, lorries, and vans, 959; cycles, 258.

Finance :

Revenue (1936–37)	£1,894,084 (Collections £890,855)
Expenditure (1936–37)	£1,930,958
Debt outstanding (March 31, 1937)	£1,822,096

Education (European) June 2, 1936 :

Scholars: Primary classes, 24,797; Secondary, 4,015.



South African Railways and Harbours]
NATAL: CROSSING THE DRIFT

NATIONAL DEBTS. Although public debt figures would appear to be precise and meaningful measures comparable from one country to another, there are many limiting factors in such comparisons. Figures are generally available for only national debt, whereas the relative importance of the independent obligations of lesser political units no doubt varies considerably among different countries. In the United States the debt of States, cities, counties and other minor civil divisions was approximately $20,000 millions in 1937, about half as large as the Federal public debt. The figures as presented herein are confined to national debt because of the limited sources of material on the debt of local agencies Although the figures given in the accompanying table are taken from the same source and have been reduced in so far as possible to a common definition, the official reports on which they are based are not equally reliable, there being a tendency in some countries towards concealment in order to indicate understatements of the debt total. Because of limited comparability of data taken from primary sources, the League of Nations *Statistical Yearbook* was used and the latest figures from this source are generally for some date in 1937.

The data are available in original form only in the local currency of each country and, therefore, must be converted into a common unit of measurement. This conversion into sterling has been made through the use of exchange rates prevailing at the date for which the debt figures are given. Exchange rates are not satisfactory in many instances because of the artificial controls and barriers imposed on foreign exchange in different countries. Even when the conversion into a single monetary unit can be achieved satisfactorily, the matter of population is a factor and the figures must be converted to a *per capita* basis. Beyond these adjustments there are many other elements which should be considered, such as the value of government property, the scope of government functions, the national income, the interest and service costs of the debt, and costs of living. For most of these factors there is little information available.

By far the largest aggregate national debts are owed by Great Britain and the United States, both being slightly under £8,000 millions These totals are more than twice the debt of France, and between four and five times as large as the debts of either Germany or Italy.

When the figures are converted to a *per capita* basis, the national debt of Great Britain is substantially more than double that of any other country except Australia. The average of £167 per person in Great Britain compares with £147 in Australia, £78 in France, £65 in Canada, and £58 in the United States. Other countries whose *per capita* national debts exceed £40 include the Netherlands, Belgium, and Italy. The latest figure available for Italy is for 1935. No doubt the expanded military programme of Italy and its conquest of Ethiopia have greatly enlarged the Italian national debt in recent years.

Comparisons between the national debt and the national income is difficult because the figures are not always available for the same years, and the income figures are even less dependable than are the debt figures However, some generalizations can be made. It appears that for Great Britain and Australia the national debt is from one-and-one-half to two times as large as the national income, and in Italy the national debt is more than twice the national income. In France, Belgium, and Greece, also, the national debt exceeds the national income. In all other countries the national income is larger than the national debt, the

National Debts of Various Countries

Country	Population (000)	Exchange to the £ Sterling	Date of Latest Comparable Figures*	Total Debt in Local Currency (000,000)	Total Debt in £ Sterling (000,000)	*Per Capita* Debt in £ Sterling
ARGENTINA	12,562	16·00	31/12/36	3,805·7 pesos	237·8	18·8
AUSTRALIA	6,807	1·26	30/ 6 /37	1,262·9 pounds	1,002·3	147·2
AUSTRIA	6,760	26·50	31/12/37	3,482·1 schillings	131·4	19·4
BELGIUM	8,331	145·00	31/12/36	54,685·5 francs	377·1	45·2
BRAZIL	42,395	80·00	31/12/36	15,320·2 milreis	191·5	4·5
BULGARIA	6,238	400·00	31/12/37	22,201·7 leva	55·5	8·9
CANADA	11,080	4·88	31/ 3 /37	3,542·5 dollars	725·9	65·5
CHILE	4,552	125·00	31/12/37	4,026·7 pesos	32·2	7·1
COLOMBIA	8,760	9·00	31/12/37	192·4 pesos	21·4	2·4
CZECHOSLOVAKIA	15,213	142·00	31/12/37	47,094·4 koruny	331·7	21·8
DENMARK	3,736	22·40	31/ 3 /37	1,322·6 kroner	59·0	16·3
FINLAND	3,603	227·00	31/12/36	4,399·5 markkaa	19·4	5·4
FRANCE	41,910	105·20	31/12/36	345,236·7 francs	3,281·0	78·3
GERMANY	67,587	12·37	31/ 3 /38	17,632·7 reichsmarks	1,425·4	21·7
GREECE	6,933	550·00	31/ 3 /37	49,679·8 drachmæ	90·3	13·0
HUNGARY	8,989	25·00	31/12/37	1,607·3 pengos	64·3	7·1
INDIA	374,200	13·24	31/ 3 /38	11,966·0 rupees	903·7	2·4
ITALY	42,677	60·00	30/ 9 /35	108,636·6 lire	1,800·6	42·2
JAPAN	70,500	17·14	31/ 3 /37	11,018·7 yen	642·8	9·1
MEXICO	19,003	18·00	31/12/36	1,326·3 pesos	73·7	3·8
NETHERLANDS	8,557	8·99	31/12/37	4,066·4 guilders	455·3	53·2
NORWAY	2,894	20·00	30/ 6 /37	1,563·9 kroner	78·2	27·0
PERU	7,000	20·00	30/ 6 /37	719·7 soles	35·9	5·1
POLAND	34,221	26·25	30/ 9 /37	4,762·1 zlotys	181·4	5·3
RUMANIA	19,423	622·00	31/ 3 /35	139,052·0 lei	223·5	11·5
SPAIN	25,050	36·00	31/12/35	21,799·0 pesetas	605·5	24·2
SWEDEN	6,267	19·40	30/ 6 /37	2,236·8 kronor	115·3	18·4
SWITZERLAND	4,174	21·62	31/12/37	2,933·4 francs	135·6	32·5
UNITED KINGDOM	47,187	—	31/ 3 /37	7,909·9 pounds	7,909·9	167·6
UNITED STATES	129,257	4·9525	30/ 6 /38	37,165·0 dollars	7,504·3	53·0
YUGOSLAVIA	15,174	220·00	1/ 3 /36	30,278·5 dinars	137·7	9·0

* Source : 1937–38 *Statistical Yearbook of the League of Nations*, Geneva 1938.

ratios of debt to income varying from about three-fourths in Canada, Japan, Spain, the Netherlands, and the United States to less than one-half in Argentina, Denmark, Finland, Germany, Hungary, and Sweden.

The national debt of the United States has only been of substantial size since the World War. Throughout the early part of the nineteenth century the gross debt never exceeded $100 millions. It rose to $2,678 millions, or a *per capita* total of $77 in 1865, as a result of the Civil War. Thereafter the debt tended downward through the balance of the century and varied only slightly in the early part of the twentieth century. In 1916 the United States public debt was $1,225 millions or $11·96 per person By 1919 the World War brought about an increase in the national debt to $25,482 millions or $240 per person From 1920 to 1930 there was a decrease, the low point being recorded in 1930 when the obligations of the United States totalled $16,185 millions Deficits in every year since 1930 have brought the level to nearly $40,000 millions at the close of 1938. It is expected that by the end of the fiscal year 1939–40 the national debt in the United States will exceed $40,000 millions in total and $300 *per capita.*

The national debt of Great Britain also was much smaller prior to the World War. Throughout the entire last quarter of the nineteenth century, the total national debt varied from approximately £700 millions to £800 millions Little variation occurred during the first fifteen years of the twentieth century, the total tending slightly downward. In 1914 the total debt was £651 millions; by 1920 this had risen to £7,829 millions. This increase was somewhat larger than the rise in national debt in the United States as a result of the World War. From 1920 to 1930 there was no decline in the British national debt, whereas the total in the United States fell off substantially. However, till rearmament borrowing began the national debt of Great Britain had shown little change, whereas the United States debt has more than doubled since 1930.

Generally, the picture shown by Great Britain and the United States is characteristic of most of the large powers of the world, namely a very sharp increase in the national debt as a result of the World War. In some instances, the occurrence of defaults wiped out large debt volumes after the World War, but in other countries, as in Great Britain, the huge debt structure remained, or, as in the United States, part of the debt was paid off. In recent years, economic stress and military activities have further expanded the debt in most countries. Interest rates, however, have declined, thus bringing about a reduction in the interest burden relative to the growth in debts. (*See* also GOVERNMENT EXPENDITURES) (R. R. N.)

NATIONAL FARMERS' UNION. One of the most important agricultural events of 1938 was the holding of the first Empire Producers' Conference, organized in connexion with Australia's Sesquicentenary celebrations, and attended by delegates from all the States of Australia, from Canada, New Zealand and Southern Rhodesia, in addition to the United Kingdom. In spite of the diversity of interests represented, complete unanimity was reached by the conference on the need for regulating the flow of supplies of primary products to the United Kingdom market and for action on an Empire basis to secure freer entry into foreign markets for Empire supplies. To secure these ends the conference approved the setting up of commodity councils wherever necessary on the lines of the existing Empire Beef Council and International Beef Conference. The recommendations of the conference were subsequently submitted to farmers' organizations within the Empire for their consideration. The policy approved by the conference received the endorsement of the United Kingdom government and the Federal government of Australia. Probably steps will now be taken to set up a permanent body to represent farmers' interests throughout the Empire, and future Empire Producers' Conferences will be organized by this body. The successful outcome of the gathering therefore rendered it of unique importance, from the standpoint not only of United Kingdom agriculture, but of agricultural industry through the Empire.

The question of long-term milk policy was again to the fore in 1938, and in November the government's Milk Industry Bill was introduced in the House of Commons. The terms of the Bill showed that virtually no concession had been made in response to the wide representations submitted to the minister of agriculture following the publication of the government's White Paper on milk policy, and in consequence the Bill encountered very strong opposition from all sections of the milk industry.

The operation of the Pigs and Bacon Marketing Schemes, which had been at a standstill, was resumed at the end of 1938, following the enactment of the Bacon Industry Act. The contract system for the supply of bacon pigs was successfully re-established.

The Union again represented producers' interests in the negotiation of contract terms and conditions for the growing of sugar beet in 1938. Severe slumps took place during the year in the sheep and barley-growing industries, and so threatening was the economic outlook generally that the Union sent a deputation to the minister of agriculture for the purpose of eliciting from him a statement of the government's intentions in the broad sphere of agricultural policy. This interview led to the preparation by the Union of a comprehensive statement of policy. Publication of it was deferred owing to the international crisis, but it was submitted to the minister of agriculture immediately after the crisis had passed. The main feature of this statement of policy was the advocacy of price insurance plans as an alternative to the levy-subsidy policy, which had been dropped by the government. At the end of the year the government was strongly pressed to take emergency action on behalf of barley growers and mutton and lamb producers pending the introduction of long-term measures on a price insurance basis. (C. FY.)

NATIONAL INCOME. The most recent estimates for national income given are for the United States, where it is estimated that in 1938 it will total between $61–$62,000 millions as compared with the recovery record of $70,000 millions in 1937. The national income began to decline in the autumn of 1937 and continued to fall off through the first five months of 1938. The trend was reversed in June and there was a marked expansion in production in almost every industry during the last seven months of 1938. At the close of 1938 economic activity was perhaps at a slightly higher level than at the close of 1937. Most indications point to an increasing national income in 1939.

The most recent estimates of the national income of Great Britain and Northern Ireland are for the year 1935 and show a *per capita* income of £95, or $472. This average is above the $433 shown by the United States figure in 1935. However, in 1935 Great Britain was enjoying approximately the same level of prosperity as prevailed in 1929, whereas in the United States the year 1935 was one of partial recovery from a severe depression. In 1929 the

TABLE I

Per Capita National Incomes in Various Countries

Country	Middle 1920's			Late 1920's			Most Recent Years		
	Year	Population (in millions)	*Per Capita* Income (£)	Year	Population (in millions)	*Per Capita* Income (£)	Year	Population (in millions)	*Per Capita* Income (£)
Australia	1924	5·9	108	1927–28	6·2	104	1933–34	6·7	73
Bulgaria	1926	5·5	13	1929	5·8	12	1934	6·1	10
Canada	1927	9·5	119	1930	10·2	120	1936	10·9	83
Chile	—	—	—	1929	4·4	37	1934	4·5	24
Czechoslovakia	1925	14·2	36	1929	14·6	38	—	—	—
Denmark	1927	3·5	55	1929	3·5	58	1935	3·7	49
Finland	1926	3·6	24	1929	3 6	28	1936	3·8	24
France	1928	41·0	41	1929	41·1	48	1936	41·9	56
Germany	1925	62·4	47	1929	64·0	58	1936	67·1	74
Great Britain	1924	44·8	90	1929	45·7	93·1	1935	47·0	95
Greece	1927	6·8	20	—	—	—	1933	6·7	12
Hungary	1927	8·5	23	1929	8·7	19	—	—	—
India	1924	330·0	8	1929	352·8	6	—	—	—
Italy	1927	40·8	24	1929	41·5	26	1932	41·8	24
Japan	1925	59·7	14	1928	64·4	18	1936	69·2	11
Latvia	1925	2·1	11	—	—	—	1935	2·0	33
Netherlands	1925	7·4	59	1928	7·6	76	—	—	—
Norway	1927	2·8	52	1929	2·8	43	1936	2·9	40
Spain	1924	22·1	34	1927	22·4	32	—	—	—
Sweden	1924	6·0	60	1930	6·1	69	1936	6·3	70
Switzerland	1924	3·9	88	1929	4·0	92	1935	4·2	115
United States	1924	114·9	134	1929	121·5	133·3	1938	129·3	108

TABLE II

Recent Trends in National Income

	1929	1930	1932	1933	1934	1935
In Currency of each Country (Indexes 1931 = 100)						
Canada	—	126·9	83·9	83·2	95·6	101·8
Denmark	104·2	105·6	95·8	100·0	108·5	115·4
Finland	132·6	120·3	100·7	110·1	129·7	136·2
France	107·0	106·1	90·0	86·9	82·1	75·1
Great Britain	112·7	110·3	98·8	101·9	109·0	117·5
Germany	132·0	122·1	78·8	80·7	91·5	99·7
Japan	—	—	—	114·2	119·8	124·3
Norway	110·2	110·1	100·0	95·3	98·0	104·1
Sweden	—	110·5	94·4	94·4	105·9	115·6
United States	151·0	127·0	73·9	78·2	92·7	102·7
In Terms of Constant Prices of each Country (Indexes 1931 = 100)						
Canada	—	105·6	90·6	89·4	96·3	101·8
Denmark	79·0	92·6	93·1	91·0	91·2	94·7
Finland	113·6	112·3	94·0	103·9	121·1	127·2
France	85·6	101·0	105·5	109·3	109·5	111·3
Great Britain	86·6	96·8	101·3	104·3	108·6	115·9
Germany	106·6	108·6	90·6	95·8	103·2	108·6
Japan	—	—	—	97·4	103·2	102·5
Norway	90·3	98·0	100·0	95·3	96·5	100·1
Sweden	—	100·6	96·1	98·0	103·2	110·6
United States	115·7	107·3	83·2	86·4	90·3	93·8

per capita income in the United States was $668 (or approximately £133 6*s*.) as compared with £93 2*s*. (or $466) in Great Britain.

Estimates of national income are available for a large number of countries throughout the world, but comparisons are often misleading. The definitions, sources, and methods of estimation, and the margin of error vary materially from one country to another. The conversion of estimates reported in different currencies into a single monetary unit, when foreign exchange is so widely controlled, is in itself a highly unsatisfactory procedure. Also, the manner of living varies greatly from nation to nation and differences in monetary income do not give satisfactory evidence of differences in standards of living.

Generally, the United States, Great Britain, Canada, Switzerland, and Australia appear to fall in a distinctly higher income range than do the other countries. France, Germany, and the small north-eastern European countries appear in the next lower group, with the southern European and most South American countries still lower, and the far-eastern countries lowest. (R. R. N)

NATIONAL INSURANCE. The most important development in Britain's comprehensive series of state insurance schemes during 1938 was the launching and emergence from its experimental stage of the Widows', Orphans', and Old-Age Contributory Pensions Act, popularly known as the "Black Coat Workers'" scheme. The specially low rates which were operative throughout 1938 ceased on Jan. 2, 1939, before when applicants who were eligible could, on payment of a maximum weekly contribution of 1*s*. 3*d*., qualify for all benefits. Pensions of 10*s*. a week each are payable at the age of 65 for a man and his wife, and unmarried women could also qualify for an old-age pension of 10*s*. a week at 65 on payment of 6*d*. a week. Much surprise was caused, however, at the end of the year by the revelation that, instead of 2,000,000 contributors joining the scheme, as had been forecast originally, fewer than 700,000 qualified. It is expected, however, that within a few years this scheme will embrace well over 1,000,000 contributors, despite the fact that, after Jan. 2, 1939, no applicants over forty years of age (the earlier maximum being 55) were eligible. Since that date full rates range from 1*s*. 3*d*. to 2*s*. 11*d*. a week for men, depending upon age of entry up to forty, and 6*d*. to 11*d*. a week for women up to forty. Maximum salary qualifications are £400 a year for men, £250 for women. Benefits are widows' pensions of 10*s*. a week, with 5*s*. for the eldest child and 3*s*. each for others; orphans' pension of 7*s*. 6*d*. a week, and old-age pensions of 10*s*. a week at the age of 65 for insured men and women and also for the wives of men pensioners at 65. The compulsory manual workers' health and pensions schemes continue.

After 25 years of National Health Insurance there are

now 18,000,000 contributors to these schemes; and £565 millions has been refunded in benefits of which £202 millions represent sickness benefit, £94 millions disablement benefit, £35 millions maternity benefit, £194 millions medical benefit, and £40 millions the provision for a large proportion of the insured population of such benefits as dental and ophthalmic treatment, medical and surgical appliances, and convalescent treatments The State, employers, and employed contribute to the cost of benefits and administration of these schemes. For the combined health and pensions schemes, men contributed 10*d* weekly, women 7*d*, and weekly benefits include sickness pay of 15*s*. for men, 12*s* for unmarried women and widows, and 10*s*. for married women. In addition there are maternity benefits, disablement benefits, and pensions of 10*s*. a week at the age of 65. During the past year working boys and girls between fourteen and sixteen have been brought into this scheme for medical benefit.

Unemployment Insurance. In 1938 for the third year in succession there was a sharp rise—July is the annual " census " month—in the number of insured persons in the industrial field. In July there were 14,675,000 insured workers in the general scheme, an increase of 60,000 on July 1937, and there were 720,000 in the agricultural scheme, an increase of nearly 100,000. The State, employers, and workers contribute equally to this fund; the workers' weekly contributions are: men 9*d*., women 8*d*., youths (18 to 21) 8*d*., and girls (18 to 21) 7*d*., weekly benefits are men (21 to 65) 17*s*., women, 15*s*., youths 14*s*., and girls 12*s*., with additional 10*s*. for adult dependant, and 3*s*. for each dependant child. In spite of increasing unemployment, and consequently of increasing demands upon the Unemployment Insurance Fund, this fund remains solvent. At the beginning of 1939 consideration was being given by the Minister of Labour's advisers to the reduction or abolition of the three days' waiting period. Under existing regulations no applicant for benefit receives payment for the first three days of his unemployment. (V. B.)

United States. The chief social security event of 1938 was the inauguration of unemployment insurance payments in 29 States and the District of Columbia. Until that year such benefits were paid only in Wisconsin. The Bureau of Unemployment Compensation of the Social Security Board estimated that during the first ten months of 1938, about 3,500,000 unemployed workers had received benefits in 29 jurisdictions. The average payment for total unemployment in 24 States amounted in October to $11·31, and for partial unemployment in 16 States, $5·06.

Because regular monthly annuities were not due under the old-age insurance programme of the Social Security Act until 1942, only lump-sum benefits on account of death and attainment of age 65 were paid in 1938. In Sept. 1938, there were in the United States, Alaska, and Hawaii, 1,737,781 recipients of old-age assistance. During the fiscal year 1937–38, the expenditures for aged pensioners totalled $360,239,000. Of this sum $174,085,000 came from the Federal Government, $151,109,000 from the States, and $35,045,000 from the local governments. The average national grant was $19·21.

In September, a total of 253,916 families including 626,438 children in 40 States, the District of Columbia, and Hawaii, benefited from federally approved State laws for dependant children. The total spent on these recipients during the fiscal year ending June 30, 1938, was $79,694,000, of which $22,269,000 came from the Federal Government, $35,496,000 from State funds, and $21,928,000 from local governments. The national average was $31·72 per family.

A total of 40,776 blind persons were in receipt of aid in 38 States, the District of Columbia, and Hawaii, in September. During the fiscal year 1937–38, the total spent on these persons amounted to $11,339,000, of which $5,046,000 came from Federal funds, $4,309,000 from the States, and $1,985,000 from local funds. The average pension for the blind varied from $8·76 in Alabama to $47·96 in California.

No changes in the Social Security Act were made by Congress during the year; but criticism continued to be focused on the old-age insurance plan, especially its contemplated huge reserves, the delay in the payment of unemployment insurance benefits, and their inadequacy. The advisory council appointed in 1937 to study the changes necessary in the old-age insurance system, presented its recommendations at the end of 1938. A conference at Washington on the subject of health security, called by the National Administration in July, endorsed in principle a wide programme of Federal aid for the promotion of health services and health insurance. (*See* also INDUSTRIAL HYGIENE; PUBLIC HEALTH SERVICE.)

NATIONAL PARKS. In Great Britain, the Standing Committee on National Parks aims to set up an authority to control the activities of organizations threatening to alter the country, and to assert the rights of nature lovers, ramblers, and naturalists to unspoiled country. It asks that an adequate proportion of the suitable land should be made into national parks and other areas set aside as reserve national parks. As yet, no government funds are available for the purpose. During 1938, the Standing Committee collected a number of photographs of possible national parks and exhibited them, among other occasions, at the Royal Agricultural Show, the Chester Conference of the Council for the Preservation of Rural England, and the Council for the Preservation of Rural Wales.

At the opening of an exhibition of photographs organized by the Friends of the Lake District and held in September at Austin Reed's, Regent Street, London, Mr. Norman Birkett, K.C., pleaded for the turning of the Lake District into a national park.

The Forestry Commissioners established a national forest park in Argyllshire, and issued in 1938 reports on projected national forest parks in the Forest of Dean and Snowdon areas. In the Forestry Commissioners' parks, the interests of the public are subordinated to the interests of afforestation, and therefore these areas cannot be considered as national parks proper, where a balance has to be maintained between landscape preservation, public access and enjoyment, and the preservation of wild life.

British Empire. As a memorial to King George V, Malaya set aside as a national park 1,900 sq. miles of land which will be available to tourists as soon as roads and accommodation can be provided. Adam's Peak and other districts in Ceylon, natural reserves for long because of the Buddhist religion of the people, will be proclaimed national parks. A large hotel is planned to be built just outside the Kruger National Park, South Africa's largest game reserve. During one year, New Zealand set aside 37,000 acres of country for national parks. (V. R.)

Canada's twenty national parks, with their combined area of over 12,000 sq. miles, continued during 1938 to attract thousands of tourists. The recession of business in the United States affected their numbers to some extent, but this was more than offset by the progress made in the

provision of better motor roads connected with the highway system south of the international boundary line. This has been especially the case with the parks situated in the Western Provinces Waterton National Park, in Alberta, which adjoins Glacier National Park, in Montana, reported over 86,000 visitors during the summer—43,000 Canadians and 42,000 from the United States and other countries—an increase of 44 per cent over 1937 This was directly attributed to the building of a new " dustless " highway. Construction work has also been proceeding on a road which will link Banff and Jasper National Parks, both in Alberta, and open up new scenic beauty between Lake Louise and Jasper. In Ontario a new channel of communication with the United States has been provided by the building of the Thousand Islands International Bridge, which was opened by President Roosevelt on Aug. 18th, thus giving access to the St. Lawrence Islands National Park.

In many of the parks the recreational attractions are being improved. In June 1938, a new swimming pool and bathing centre was opened at Miette Hot Springs, in Jasper Park. There and at Banff the mountain golf courses are proving increasingly popular. Jasper, Banff, and Revelstoke have developed as winter sports centres. Development work is also being carried out on two of the newer and smaller parks—those in Prince Edward Island and Cape Breton Island, Nova Scotia.

Further increases are reported in the numbers of wild animals to which the parks offer a sanctuary. As in previous years, the buffalo herds in the Buffalo and Elk Island Parks, in Alberta, had to be rigorously thinned out because of their rapid natural increase, the pelts and meat being sold to the public. (R. J. A.)

Africa. The Institute of the National Parks of the Belgian Congo, with headquarters at Brussels, has decided to issue a collection of photographs of the vegetation of these parks. The first series is of the vegetation of the 222,400-acre Albert National Park, near Ruwenzori.

South America. Over 45 sq. miles of virgin forest, between 2,000 and 10,000 ft. above sea-level, near Itatiaya, in the southern part of Brazil, were set aside to conserve the flora, and construction of roads and hotel accommodation is being pushed forward.

Europe. There is only one national park in France, that of Pelvoux, in the Hautes Alpes and Isère departments. Between Czechoslovakia and Poland an international park is situated in the High Tatras.

See *The Case for National Parks in Great Britain* (The Standing Committee on National Parks, 1938); Millicent H. Morrison, *Wild Life and Rare in National Parks and Paradises round the World* (Green Cross Society, 1938). (V. R.)

United States. On Dec. 31, 1938, there were 149 separate areas in the national park and monument system of the United States, with a total area of 19,463,968·82 acres. Twenty-seven of these areas are national parks, areas reserved by the Congress because of their superlative scenery or some historic or scientific feature of outstanding national interest. Seventy-five are national monuments, areas established by presidential proclamation under authority of the Congress because of historic, prehistoric, or scientific interest.

The establishment of the Olympic National Park, Washington, in the closing hours of the 75th Congress was a major conservation achievement, assuring the preservation of an adequate representation of the magnificent rain-forests of the Olympic peninsula and affording protection to the greater part of the habitat necessary to maintain the rare Roosevelt elk.

Other new areas established during 1938 were the Channel Islands national monument, California, Fort Laramie national monument, Wyoming; Ackia national monument, Mississippi; Salem Maritime national historic site, Massachusetts, and Hopewell Village national historic site, Pennsylvania.

At the close of 1938 over 95 per cent of the lands necessary for inclusion in the Isle Royale national park project, Michigan, had been acquired, giving reason to hope that another national park would be added to the system in the first six months of the new year. Great progress also was made towards the completion of the Great Smoky Mountains national park, North Carolina-Tennessee, with the appropriation of $743,265·29 to make possible the purchase of the lands still to be included within the authorized park boundaries.

The Government acquired the historic Chesapeake and Ohio canal, once a famous waterway between old Georgetown, in Washington, D.C., and Cumberland, Md. Plans include its restoration for recreational purposes in addition to the restoration of some of the historic lock houses, taverns, and other structures.

During the travel year ended Sept. 30, 1938, 16,233,688 persons visited the Federal park areas—an increase of more than a million over the previous highest figure reached in 1937.

Full regionalization of all National Park Service activities was put into effect during the year.

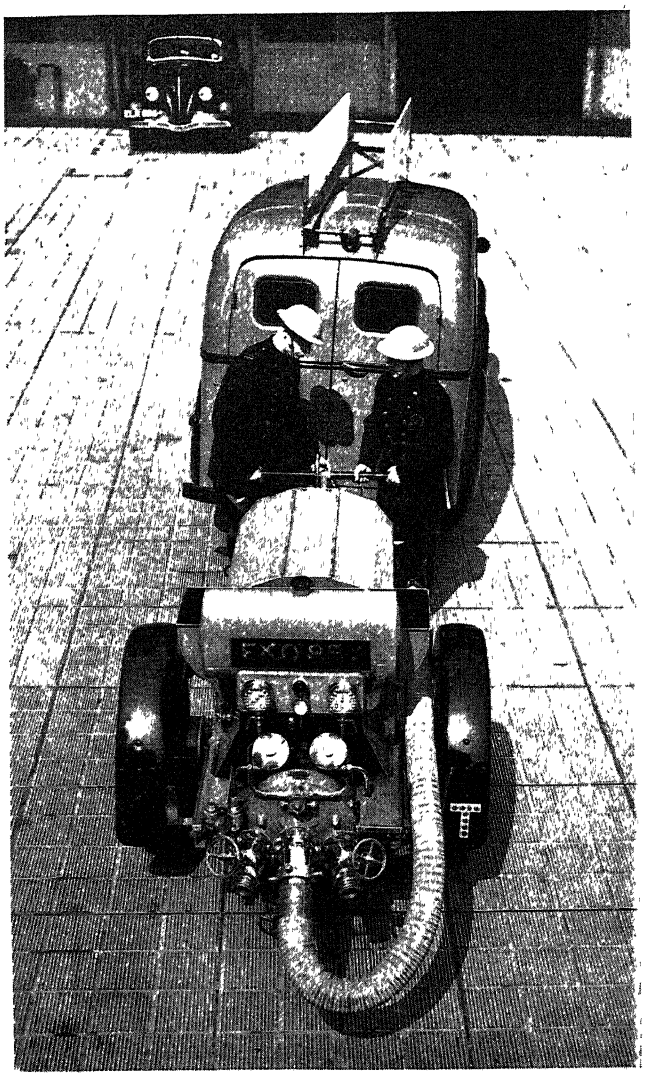
NATIONAL SERVICE. With the increasingly difficult international situation the problem of organizing the man-power (and woman-power) of Great Britain in preparation for the eventuality of war has in 1938, and since, naturally loomed large. The approach to the problem has been conditioned by three main factors: the government's insistence, in the face of considerable pressure from certain sections of its supporters, on the maintenance of the voluntary principle, at any rate in time of peace; the widespread recognition of the vital importance, in any future struggle between first-class Powers, of keeping the industrial machine working at more than its normal speed and efficiency whilst air raids and fear of air raids might threaten to prevent it from working at all; and in consequence of this, the probably decisive importance of the civilian services, in particular of Air Raid Precautions (A.R.P.).

The beginning of 1938 found A.R.P., except for a few highly developed centres such as Southampton, in a rudimentary condition. This was due in part to the problem of finance, solved, temporarily at least, by the Air Raid Precautions Act of 1937, which provided for government grant to the responsible local authorities ranging from 60 per cent to 85 per cent of the total approved expenditure; and in part to official and popular indecision as to whether A.R.P. could be made effective at all, and if so, how. From the beginning of the year local authorities proceeded to formulate schemes for submission to the Air Raid Precautions Department of the Home Office and to appeal for recruits. A nation-wide recruiting campaign was launched in March by the Home Secretary, Sir Samuel Hoare, who asked for a million volunteers. Stimulated, of course, by the crisis over the Czechoslovak question in September, this number was obtained by the end of the year, by December about 1,100,000 volunteers having enrolled. The irregularity of development caused by the reliance on local government was, however, evidenced by the fact that at the

end of the year, Hull, an important town in an exposed position, had only 5 per cent of the number of A.R.P. workers estimated as necessary. Broadly speaking, therefore, the end of the year found the numerical question in a fair way to being resolved, but with serious gaps still left open.

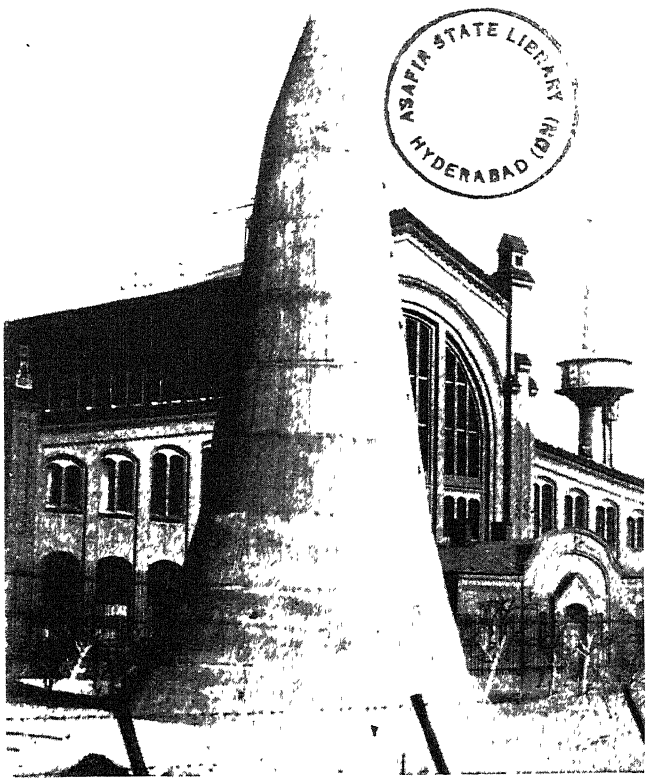
Technical developments, and the placing of all civilian services under the control of a minister of cabinet rank, Sir John Anderson, together with the growing realization of the gravity of the situation, made the moment suitable for further expansion. In the meantime the question of the organization of British man-power as a whole had been widely canvassed Conscription, rejected time and again by the government, was definitely repudiated by the prime minister in the House of Commons during the week following the Munich settlement, but its advocates still fought a rearguard action in claiming that if service itself should not be compulsory, at least the registration of each man's age, occupation, and qualifications, for use in an emergency, should be.

This proposal was equally rejected on behalf of the government by Sir John Anderson in a speech in the House of Commons on Dec 1, in which he stated that, together with his duties in connexion with civilian defence, he was responsible for " the effective utilization of the resources of



Keystone]

TRAILER AND PUMP TO BE USED FOR A.R.P. TRAINING FOR THE LONDON AUXILIARY FIRE SERVICE


ASAFIA STATE LIBRARY HYDERABAD (DN)

Planet News]

BOMB-PROOF AIR RAID SHELTER, BERLIN

the nation for national voluntary service ", and that a compulsory register would not be valuable in peace because it would so rapidly become out of date. But he agreed that in war a compulsory register would be necessary, and that preparations for its rapid compilation must be made beforehand.

In addition to the provision of machinery for this purpose Sir John announced that the government's scheme included an immediate voluntary register, together with the publication of a National Service Handbook as a guide to individuals as to the services for which they should volunteer, a co-ordinated campaign of recruiting for all services in 1939, and the expansion of arrangements for training new volunteers. A national service organization was to be formed, with local committees to afford guidance to individuals. Later in the month it was stated that this scheme would be reviewed at the end of March, while Labour Party support for the campaign was assured.

The campaign was launched by the prime minister in a broadcast speech on Jan. 23, 1939. This was followed by a great rally at the Albert Hall next day, while on the 25th, the distribution of the *National Service Handbook* began, and there was published a Schedule of Reserved Occupations, whose extensive character showed clearly the recognition by the government of the necessity for maintaining a high volume of industrial activity in war. The problem of utilizing professional skill to the best advantage does not seem so clearly recognized, but an Advisory Council to the Ministry of Labour (which is responsible for the register and is now designated the Ministry of Labour and National Service) has this question, at least to some extent, in hand. And meanwhile recruiting for all services, both the fighting and the civilian, appears to be making fairly satisfactory progress.

(W. T. We.)

NATIONAL TRUST, THE. During 1938 Moreton Old Hall, Cheshire, a fine " black and white " building, was presented to the National Trust by Bishop Abraham, and Cilgerran Castle, Pembrokeshire, by Mrs. Colby. The George Inn, Southwark, acquired in 1937, has been renovated The seventeenth-century Old Devonshire House in Boswell Street, London, was recently made over by Major Benton Fletcher. The Wordsworth National Memorial Committee bought Wordsworth's birthplace at Cockermouth for the Trust.

The Forestry Commissioners agreed with the Trust and the Council for the Preservation of Rural England to restrict tree-planting in Upper Eskdale. The Rannerdale Estate, including meadows fringing Crummock Water, was sold under covenant with the Trust to prevent spoliation Land in Dovedale and the Manifold Valley was purchased, and Sir Robert McDougall gave funds with which land in Upper Dovedale was bought.

Mrs. Sebag-Montefiore presented fifty acres of cliff-land at the Yealm Estuary, Devon, and covenants have been obtained over a further 309 acres. Hudnall Common, Herts, was transferred to the Trust through the Commons, Open Spaces and Footpaths Preservation Society.

As a direct result of the 1937 National Trust Act, 51 acres of Highdown Hill, Sussex, were conveyed for preservation as an open space. Pastureland and cottages at the Devil's Punch Bowl were saved from " development ". The Youth Hostels Association, with the National Trust and other bodies, sponsored an appeal for purchasing White Park Bay, Northern Ireland. The Trust launched appeals for funds for Avebury, Wembury Bay, Wicken Fen, etc.

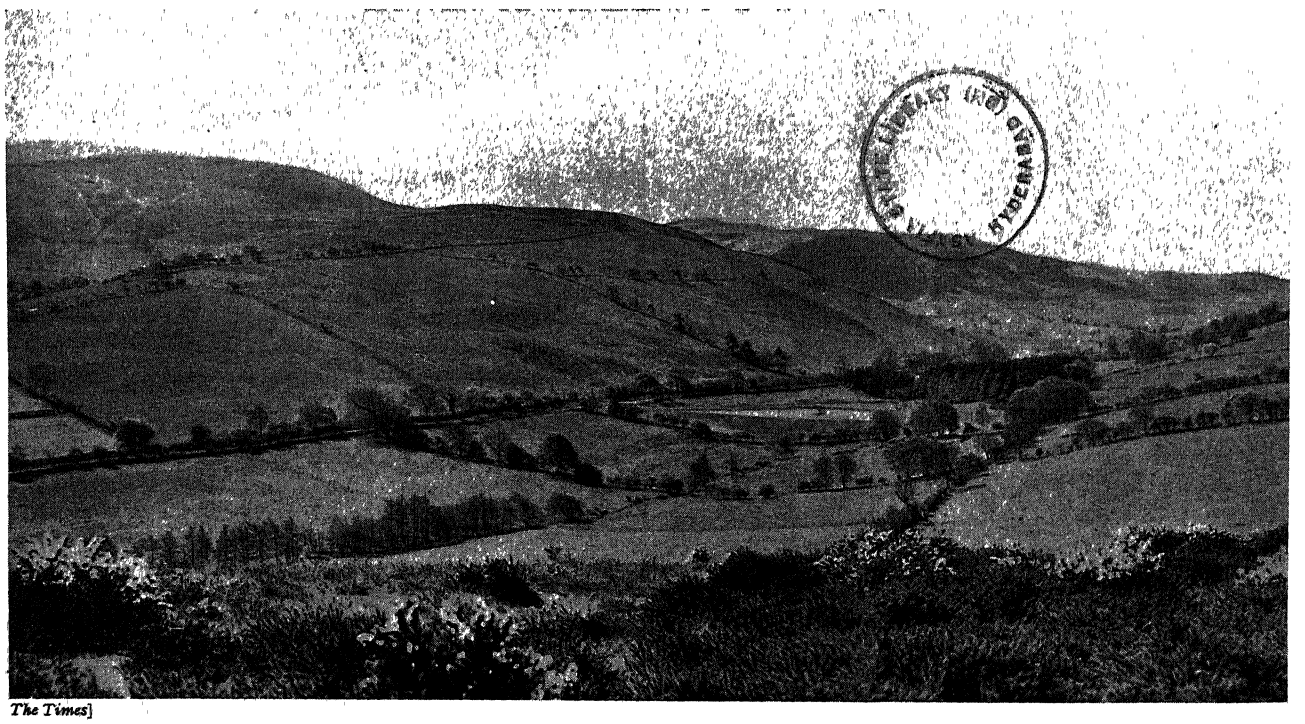
The Trust is sponsoring a bill in parliament to enable it to take over entailed historic houses while the owners live in them, on condition that the public is allowed reasonable access.

The National Trust for Scotland acquired the house in Kirriemuir in which Sir James Barrie was born, and the cottage at Cromarty where Hugh Miller was born on Oct. 10, 1802. (V. R.)

NATURAL HISTORY MUSEUMS. Evidence continues to accumulate indicating that natural history museums are changing their ways. There have been museums or collections of natural objects for centuries, but it is only in the last few decades that they have attained a new status and changed more than in all their previous history. In municipalities, states, and nations their importance, amounting almost to indispensability, is everywhere being recognized In 1938 the British Standing Committee on Museums and Galleries made sweeping recommendations for new museums and extensive additions to existing ones at South Kensington in London. Significant, also, was the establishment in Argentina, by executive decree, of a national " Commission on Museums and Historic Sites ". Such commissions already exist in many other countries.

The multiplication of small municipal museums has continued. In the British Isles it is stated that new museums have been opened at the rate of one every three weeks for the past ten years, and one student, investigating museum methods in 1938, visited no less than 300 museums of various kinds in Britain. In the United States there are now 45 museums in national parks. Louisiana proposes " to establish an appropriate historical or natural history museum within each State Park ". Other States have already gone far in the same direction. In the United States, in addition to the large privately endowed institutions, there are now 23 independent State museums. A new specialization in the museum field is a psychology museum opened in Chicago. In Canada there are 36 museums with full-time staffs. Even in newly organized Manchukuo there are at least six museums of some importance; and Russia has more than 700 of all classes.

In Russia, the aim of many governmentally supervised museums is plainly adult education for the masses. Exhibits are shown without glass fronts and visitors are encouraged to handle many of the objects. The same aim is



The Times]

THE GARTH ESTATE IN FLINTSHIRE, 1,000 ACRES OF WHICH HAVE BEEN GIVEN TO THE NATIONAL TRUST. THE GEORGE III JUBILEE TOWER ON MOEL FAMMAU IS SEEN ON THE LEFT

the fundamental one in nearly all museums elsewhere. Entertainment is still a great function, but the tendency is to combine it with education. The modern demand is for exhibits that are thought-provoking or definitely instructive as well as those that inspire wonder and admiration. The habitat group, which has been especially developed in America, continues to be popular both for its colourful art and its subtle didacticism During 1938, six large habitat groups were completed by the American Museum of Natural History in New York. In Chicago, at the Field Museum, seven new groups of large size also were opened. In museums with smaller resources such large groups are still being made, but the small diorama, which serves many of the same purposes, is receiving much attention.

The movement for the training of museum workers to meet the requirements of modern specialization is gaining headway both in Great Britain and the United States. The British Museum Association, through its education committee, offers a diploma for students of museology, which is thus becoming an organized profession. The Carnegie United Kingdom Trustees continued their policy of promoting inter-museum travel. During 1938 seven grants were made, each essentially a travelling fellowship. The National Museum of Wales accepts students on a three-year basis for work in special branches of science, and in the U.S., the Buffalo Museum has regular courses for students intending to pursue museum work and a system of "internes" closely comparable with that so well established in medical education. Several other museums provide similar service.



Fox Photos]
SOUTH KENSINGTON NATURAL HISTORY MUSEUM: A 90-FT. MODEL OF A BLUE WHALE, REPRODUCED FROM INFORMATION PROVIDED BY THE "DISCOVERY" EXPEDITION

NAURU: *see* PACIFIC ISLANDS, MANDATED.

NAVAL STRATEGY: BRITISH KEY AREAS AND KEY POINTS. The key areas in naval strategy are those unavoidable bottle-necks on the routes of shipping through which it is obliged to pass or in which it is forced to concentrate, such as narrow passages, landfalls, and approaches to important ports; and the key points are those positions within those areas in which naval forces either maintain their supplies and repairing facilities, or from which they conduct their operations.

The approaches to the United Kingdom are the most important key area in the British Empire. An enemy who should obtain "command" of the areas of approach to the island would isolate it and enforce its surrender for want of food, raw materials, and exports. The effect of such a surrender would be to place all the outlying positions of the Empire in danger, since none is as yet strong enough to resist aggression by a first-class Power. It is thus essential to maintain forces capable of preventing an enemy from commanding the western approaches, the line of the Channel, and the Straits of Dover, and for that purpose secure bases of operation are needed in each of those areas. During the war of 1914–18 the naval forces engaged in the protection of the western approaches operated from the harbour of Cork. On April 26, 1938, this harbour was transferred to the government of Eire. At the other end of the Channel the increased numbers, range, and power of aerial forces in recent years has exposed the eastern harbours of the island to attack upon a more extensive scale than hitherto.

The next area of convergence is the Mediterranean, with its gateways in the western and eastern ends and its narrow waist in the Malta channels, while throughout its length the route through the sea lies within reach of attack from flanking positions by surface, submarine, and aerial craft. The present British key points in this area are Gibraltar and Malta, but a position is lacking in the eastern basin where, for the present, no fortified base under British control as yet exists.

Great Britain is, and always has been, interested, not only in the key points in her own possession, but also in those in the hands of other Powers. In the eastern basin the island of Rhodes is a fortified naval base; in the western, Italian forces continue to occupy the island of Majorca; in the middle of the sea Pantellaria, lying between Malta and Tunis, has been fortified, and during the latter part of the year an agitation has been developed in Italy for the cession to Italy of the French possessions, Corsica and Tunis. The transfer of these key points would be a serious matter for Great Britain.

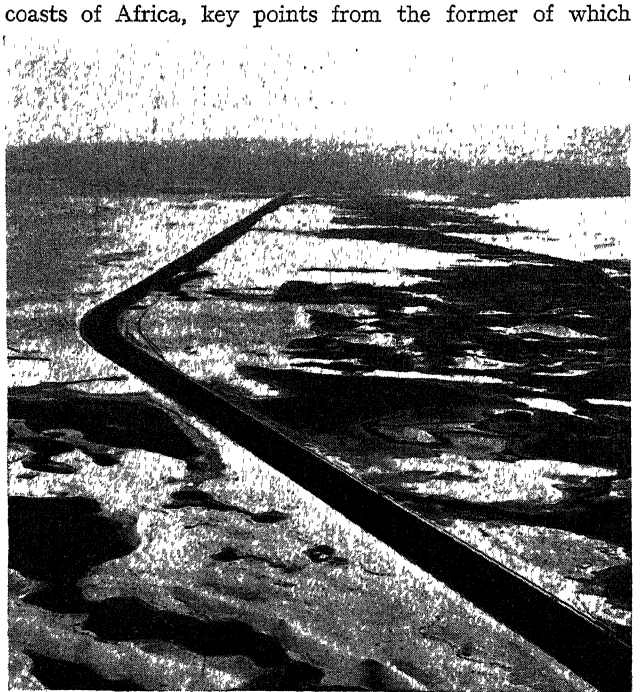
As the east-bound shipping pursues its way on leaving the Suez Canal, it passes down the fifteen-hundred mile length of the Red Sea. The whole of this sea may be considered a key area, since effective deviation from its route is not possible for reasons of navigation. The route is flanked by the foreign naval bases at Massawa, Assab, and Jibuti. These are key points. The end of the year has witnessed a demand for the transfer from France to Italy of the territory of Jibuti, a transfer which, like that of the positions in the Mediterranean already referred to, would be injurious to Great Britain.

At the exit of the Red Sea lies the British key point Aden, with its subsidiary position, Perim. From Aden those forces must act whose duty it is to afford protection to the shipping in the key area of the Straits of Bab-el-Mandeb until it reaches the open sea beyond Socotra.

In the Indian Ocean the central key area is that encircling the southern end of Ceylon: Colombo has been called the "Clapham Junction" of the sea, for there the trade converges from Aden, Madras, Bombay, Calcutta, Rangoon, Africa, the Straits of Malacca, and Australia. There the key point is the base at Trincomali, a good harbour with a small naval store establishment.

Passing to the eastward the next great point, and the most important, is Singapore. There the new naval base which was begun shortly after the war was formally opened on Feb. 14, 1938. Its importance lies in the fact that it is the great focus of the trade with China and that a fleet operating therefrom provides a safeguard against large-scale attacks either in Australasia or in the Indian Ocean. Hong Kong, until the establishment of Singapore the principal British key point in the China Sea, has diminished in importance owing to lack of room for the large modern ships, and for the larger fleets which the rise of Japanese naval power have brought into being. It has been further threatened by the landing of Japanese armies in South China during the latter part of the year.

The possibility that, in certain circumstances, it might prove either desirable or necessary to divert some or all of the Mediterranean trade to the Cape route has been recognized; hence the Cape, with its naval station and dockyard at Simonstown, has assumed a new, or resumed an old, importance—the importance which dictated the retention of the Cape of Good Hope at the end of the Napoleonic wars: for the area becomes a key area. Attention has therefore been paid in an increasing measure during 1938 towards improving the facilities of Table Bay and Simonstown for merchant shipping and naval squadrons. The renewed demand, made in increasingly emphatic terms, for the return to Germany of all the Colonies of which she was deprived has redirected attention to one of the reasons which led to the refusal to return them at Versailles. The principal aim of their recovery had then been asserted with an unmistakable bluntness by various German writers, official and otherwise, who expressed the need for strongly fortified harbours on the east and west coasts of Africa, key points from the former of which pressure could be brought upon India and Australia, and from the latter upon Great Britain. So Admiral Koester, in the *Kreuz Zeitung* of Dec 22, 1916, in emphasizing the disadvantages the German commerce-attacking vessels suffered from want of such key points, observed that the West and East African colonies were Germany's most important Colonial possessions; and Admiral Hoffmann, in the *Alldeutsche Blatter* of Dec. 30, 1916, stressed the need of well-defended bases in Africa. In the notorious "Maritz" Treaty, the Governor of German South-West Africa, von Seitz, spoke of the importance of the South African ports to Germany in war in order to lessen England's food supply and as a menace to British rule in India. Other opinions of the same kind are quoted in Mr. Lloyd George's first volume of *The Truth about the Peace Treaties*, published in 1938.



Aerofilms]

THE SUEZ CANAL

Turning to the Australian waters, the first key point is Port Darwin, an advanced position in the north, well situated on the flank of the line of communication from the northward. The demand for the return of the whole German colonial possessions would include what had been German New Guinea. The existence of a foreign naval base which would inevitably arise in such a position could only be viewed with the greatest apprehension in Australia, more particularly in the present grouping of the three Powers, Germany, Italy, and Japan.

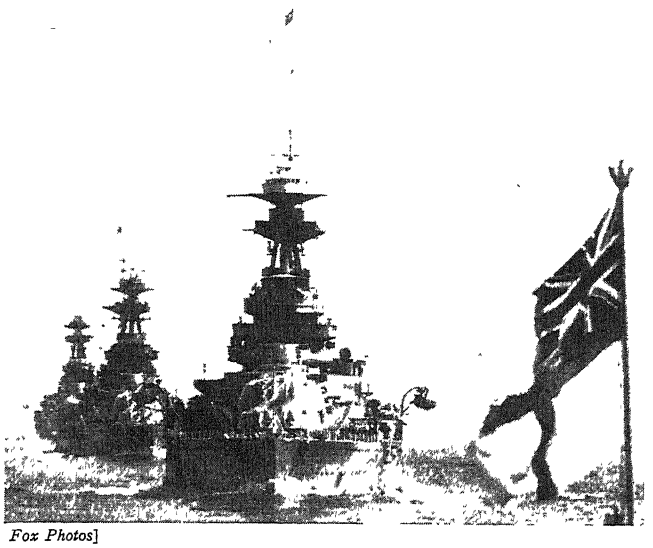
In the Atlantic, the harbour of Sierra Leone is an important position with regard to the defence of the South Atlantic trade. During the year 1938, the continuance of the civil war in Spain, with its foreign commitments, has given rise to speculation concerning the possibility that the Canary Islands might be ceded to one of the Nationalist party's foreign supporters. This, like other transfers to which reference has been made, would be most detrimental to the security of the highly important British communications with the Cape of Good Hope and South America.

Finally, in the Western Atlantic, there are small naval bases at Jamaica, in the Leeward Islands, and at Bermuda, important for the service of cruiser forces employed in the defence of the trade with that area, and that trade which, in an increasing volume, passes through the Panama Canal. In the North Atlantic, Halifax is of importance for the protection of the Canadian routes, and, on the other side, Vancouver, for the defence of the trade on the Pacific Coast.

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NAVIES OF THE WORLD. At the end of 1938, the warship builders of the world were busier than at any date since the World War concluded. Every State of importance is taking measures to increase its naval strength, more especially the seven leading Powers—the British Empire, the United States of America, Japan, France, Italy, Germany, and Soviet Russia.

Although the actual number of capital ships (or battleships, if that term be preferred) under construction is uncertain, it will not be less than 30 by the time the latest units authorized have been laid down. Of these, seven are British, eight American, two or possibly four Japanese, four French, four Italian, three or perhaps four German, and



Fox Photos]
THE "REVENGE" LEADING THE "ROYAL SOVEREIGN" AND "RAMILLIES" DURING THE JUNE MANŒUVRES IN THE CHANNEL. KING GEORGE VI WAS ABOARD THE "NELSON"

at least one Russian. Though the displacement as well as the exact number of the Japanese ships is doubtful, it has been persistently reported that they are to exceed 40,000 tons. On this account there is little doubt that the two latest British battleships, to be laid down in March, 1939, as well as the American pair to be provided for in the 1939 programme, will be vessels of between 40,000 and 45,000 tons. Otherwise, all the ships enumerated above are of 35,000 tons displacement, in accordance with the original limitation imposed by the London Naval Treaty of 1936, which was expanded by agreement to 45,000 tons in 1938.

Though the various designs differ in detail according to national views, certain main features are common to all, such as high speed—varying from 28 to over thirty knots—absence of torpedo tubes, improved protection against plunging fire or air bombing, enhanced anti-aircraft armament, and the inclusion of seaplanes and catapults in their equipment. Such similarity is natural in ships whose displacement is restricted to the same figure, giving little latitude for innovations if adequate offensive power, protection, speed, and sea-keeping qualities are to be preserved.

The calibre of the main armament is the most variable feature. While the British ships mount ten fourteen-in. guns, the Americans and probably the Japanese and Russians have nine sixteen-in., and the French, Germans, and Italians either eight or nine fifteen-in. In range and accuracy there is probably little to choose between the three calibres, the main difference being the weight of the gun and its mounting and of the shell that can be fired.

With the exception of Italy, whose naval staff regard the type as superfluous in view of the country's geographical position, all these Powers are building aircraft carriers, varying in displacement from 23,000 to 10,050 tons. Of these, the largest and most recently designed that has so far been completed is the British "Ark Royal", of 22,000 tons with a speed of 31 knots. She is armed with sixteen dual-purpose guns of 4·5-in. calibre, and can operate sixty aircraft, though her spacious hangars, arranged on two decks, could doubtless accommodate many more than this.

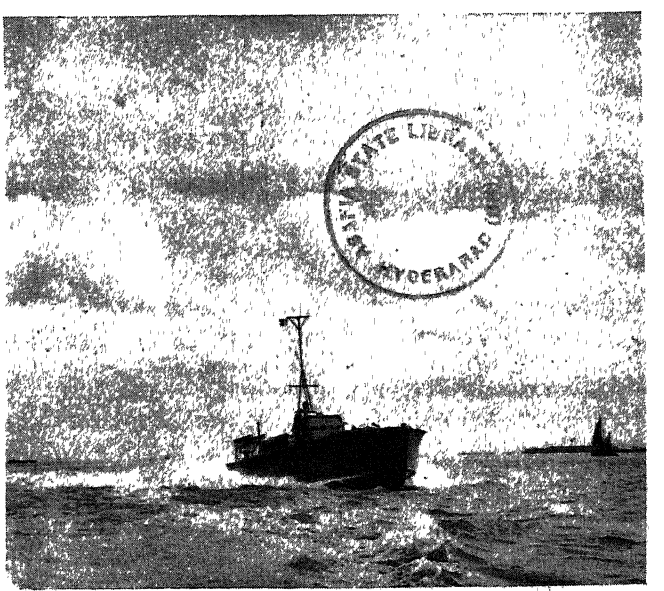
Cruisers are limited by treaty to a displacement of 8,000 tons and a maximum gun calibre of 6·1 in.; but this does not apply to Japan, which was not a party to the London Treaty. Although there have been rumours that battle cruisers of about 15,000 tons are being built by that country, evidence in support of such statements is lacking; and it is probable that 8,000 tons will also mark the limit of Japanese cruiser displacement for the present.

Destroyers continue to increase in size, the latest to be laid down for the British fleet being of over 1,900 tons displacement. So far the American limit has been 1,850 tons, but Japan has launched at least two of about 2,000 tons. France, after going up to nearly 2,900 tons, has reverted to a figure of under 1,800 tons for her latest vessels. Italy has not gone beyond 1,729 tons in destroyers, but in her latest programme includes a dozen cruisers of 3,362 tons, obviously designed to repel destroyer attacks. Germany's biggest destroyers are of 1,811 tons, but Russia has completed several of from 2,600 to 2,900 tons.

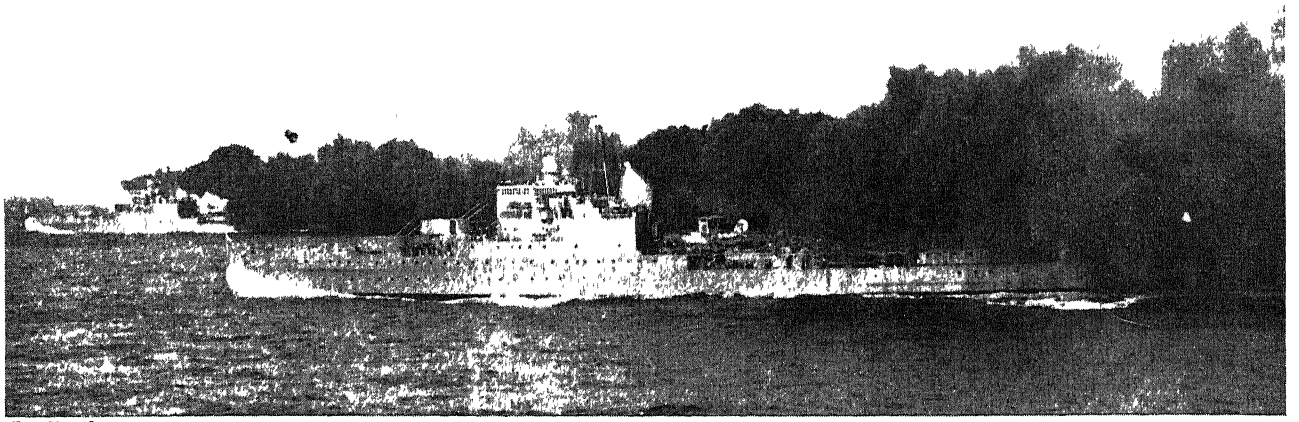
Submarines are being built in larger numbers than ever. In the British and American navies, the number of underwater craft under construction is almost the same—15 and 16 respectively. Japan has at least 8 building, France 16, Italy over 30, Germany at least 15. Russia, which is credited with the possession of more submarines than any other country, has published no figures, but 30 is a conservate estimate of the number in hand.

British Naval Strength. Since the expiration of the Naval Treaties of 1922 and 1930 removed quantitative restrictions, active steps have been taken to replace the high proportion of out-of-date ships which would have constituted a serious handicap had the British fleet been called upon to go to war. In the two years that have elapsed, good progress has been made with new construction, but not until 1941 will the situation be satisfactory as regards the more important categories of ships. This also applies to the question of personnel.

At the end of 1938 the British Navy comprised the following warships: 12 battleships; 3 battle cruisers; 15 heavy cruisers mounting eight-in. guns; 44 cruisers with six-in. guns; 2 anti-aircraft cruisers; 1 minelayer; 6 first line aircraft carriers; 169 destroyers; 54 submarines; 35 escort vessels; 42 minesweepers; 8 patrol vessels; 3 aircraft tenders; 2 netlayers; 18 river gunboats; 6 coastal mine



Fox Photos]
ONE OF THE NEW MOTOR TORPEDO BOATS WHICH ACCELERATE FROM 5 TO 38 KNOTS IN 8 SECONDS, AND DECELERATE FROM 38 KNOTS TO STOP IN 3 SECONDS WITHOUT REVERSING ENGINES



Fox Photos]

ATLANTIC MANŒUVRES (MARCH 1938) OF THE LATEST "CITY" CRUISERS. THESE HAVE A SPEED OF 32½ KNOTS, "WALRUS" AMPHIBIAN AIRCRAFT, AND TORPEDOES

layers; 16 motor torpedo boats; and 3 monitors. In addition, there were under construction or authorized (in many instances as replacements): 7 battleships; 22 cruisers; 3 minelayers; 5 aircraft carriers; 30 destroyers; 15 submarines; 5 escort vessels; 4 minesweepers; 3 patrol vessels; 4 river gunboats; and 11 motor torpedo boats. Since 1933, when the total personnel had dropped to 90,300, there has been a gradual increase until now it is about 121,000, which is 30,000 less than at the outbreak of the World War in 1914.

A good deal of reconstruction is going on in the dockyards, including not only the modernization of capital ships, but the conversion of old cruisers into anti-aircraft ships and of old destroyers into escort vessels. In common with the latest types of new escort vessels, these destroyers will mount four-in. guns on high angle mountings to enable them to protect convoys of merchantmen against air attack.

Naval forces of the Dominions, including the Royal Indian, Royal Australian, and Royal Canadian Navies and the New Zealand Division, are included in the above figures, so far as material is concerned, but not their personnel, which amounts to about 10,000 with reserves. There are also reserves of personnel in other British overseas territories, such as Newfoundland, Kenya, South Africa, Hong Kong and the Straits Settlements.

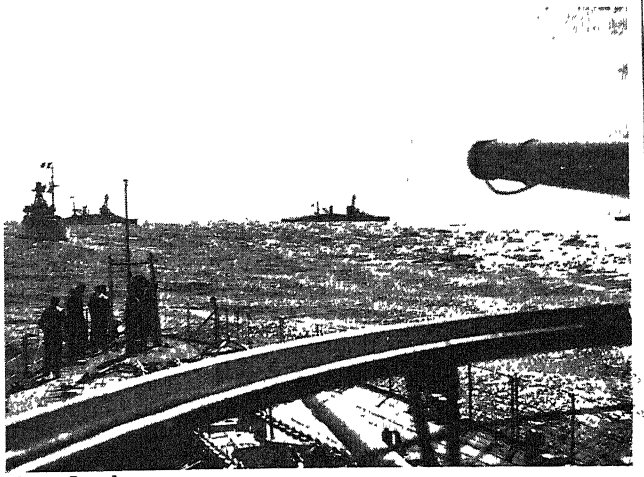
American Naval Strength. During 1938, large increases in the numbers of all classes of warships were approved. Total strength at the end of that year included: 15 battleships; 17 heavy cruisers with eight-in. guns; 17 light cruisers with six-in. guns; 5 aircraft carriers; 206 destroyers; 90 submarines; 10 gunboats; 23 patrol vessels; 3 aircraft tenders; 8 light minelayers; and 41 minesweepers. Under construction or about to be ordered were: 8 battleships; 2 aircraft carriers; 7 cruisers; 40 destroyers; 16 submarines; 4 aircraft tenders; 1 minelayer; 2 minesweepers and 3 experimental motor torpedo boats. The total personnel amounts to 125,000, exclusive of reserves.

Japan. Since 1936, little official information has been forthcoming concerning Japanese naval construction; but at the end of 1938 the total strength was known to be: 9 battleships (or possibly 10, if one which was demilitarized has been rearmed as proposed); 5 aircraft carriers; 12 cruisers with eight-in. guns; 26 cruisers with six-in. or 5·5-in. guns; 5 old cruisers rated as coast defence ships; 112 destroyers; 12 torpedo boats; 8 submarine chasers; 62 submarines; 4 aircraft tenders; 11 minelayers; 12 minesweepers; and 10 gunboats. So far as unofficial reports can be relied upon, the following ships are believed to be building: 2 or 3 battleships; 6 cruisers; 2 aircraft carriers; 10 destroyers; 8 torpedo boats; 6 submarine chasers; 8 submarines; 4 minesweepers; and 1 aircraft tender. The total personnel amounts to 107,000.

France. Although efforts are being made to recover lost ground, the French navy has been handicapped in recent years by slowness of construction. Its present strength includes: 7 battleships; 1 aircraft carrier; 7 cruisers with eight-in. guns; 12 cruisers with guns of lighter calibre; 59 destroyers, of which 32 are of between 2,000 and 3,000 tons displacement; 14 torpedo boats; 77 submarines; 2 minelayers; 1 netlayer; 1 aircraft tender; 37 escort and patrol vessels; 2 minesweepers; 13 submarine chasers; 9 river gunboats. Under construction or about to be laid down are: 4 battleships; 2 aircraft carriers; 3 cruisers; 18 destroyers; 4 torpedo boats; 16 submarines; 4 aircraft tenders; 23 escort and patrol vessels; 18 submarine chasers; and 1 river gunboat. The total personnel is 77,500.

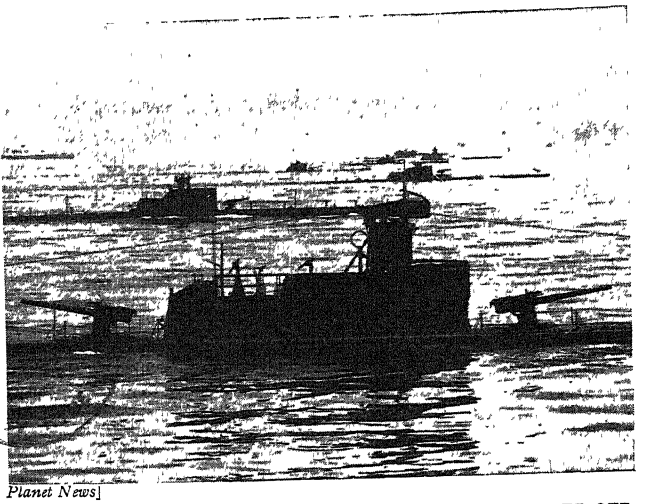
Italy. Under the present administration the Italian navy is undergoing steady expansion, its present strength comprising: 4 battleships (2 of them completely rebuilt, the other 2 in process of reconstruction); 7 cruisers mounting eight-in. guns; 15 cruisers with lighter weapons; 1 obsolete cruiser of value only for coast defence; 66 destroyers; 67 torpedo boats; about 100 motor torpedo boats; 90 submarines; 1 escort vessel; 1 aircraft tender; 13 minelayers; 40 minesweepers; 14 gunboats; and 5 monitors. There are under construction 4 battleships; 12 cruisers; 10 destroyers; 30 or more submarines; and an uncertain number of motor torpedo boats. The tendency has been to concentrate on the construction of submarines and torpedo craft. The personnel is nearly 70,000.

Germany. German naval strength has increased steadily since the restrictions imposed by the Treaty of Versailles were replaced by the conditions of the Anglo-German Naval Agreement, under which Germany's strength is to be 35 per cent of that of the British navy in all classes except submarines, in which 45 per cent, or, should the need arise, 100 per cent, is to be the figure. As a result, the ships in service now include 2 battleships; 3 armoured ships of 10,000 tons, popularly known as "pocket



France-Presse]

FRENCH NAVAL MANŒUVURES



Planet News]

ITALY'S SUBMARINE FLEET EXERCISING BEFORE HERR HITLER OFF NAPLES IN MAY 1938

battleships"; 6 cruisers with six-in. guns; 31 destroyers; 20 motor torpedo boats; 56 submarines; and 21 minesweepers Under construction or about to be laid down are 3 or possibly 4 battleships; 2 aircraft carriers; 3 cruisers armed with eight-in. guns; 6 cruisers armed with six-in. guns, 11 destroyers; 30 torpedo boats; 12 motor torpedo boats; 15 submarines; and 23 minesweepers. Personnel is growing at a very rapid rate to keep pace with this new construction, and is now believed to exceed 50,000.

Russia. In the absence of official information, it is not possible to compile exact figures about the Soviet navy, but those given here are approximately correct. Completed ships are believed to include: 3 old battleships; 5 cruisers (excluding obsolete vessels used for training); 1 cruiser-minelayer; 23 destroyers; 21 torpedo boats; 130 motor torpedo boats; 134 submarines; and many small minelayers and minesweepers. Under construction or about to be begun are at least 1 battleship; 2 cruisers; 3 aircraft carriers; 6 destroyers; and about 30 submarines. There are no recent figures as to the total personnel, but it is probably between 30,000 and 40,000.

Causes of Expansion. There is no direct competition between Britain and the United States in naval armaments, and in neither country is the other ever regarded seriously in the light of a possible opponent. But aggressive action in certain quarters has caused a feeling of uneasiness in all nations, great and small, with the result that it has been deemed prudent to strengthen naval defences everywhere.

Some of the most peaceable countries have shown this very plainly. In the Netherlands, a programme unprecedented in modern times has been approved. The existing fleet includes: 4 cruisers; 8 destroyers; 12 torpedo boats; 21 submarines; 3 escort vessels; 1 old coast defence ship; 10 minelayers; and 16 minesweepers. There are building or on order: 3 cruisers; 4 destroyers; 30 motor torpedo boats; 9 submarines; 1 gunnery training ship; 7 escort vessels; 1 minelayer; and a number of minesweepers and small craft. Particular concern is felt for the safety of the vast Dutch possessions in the East Indies, for the protection of which the existing fleet is thought to be insufficient.

In the Scandinavian countries there is also evidence of uneasiness in regard to the international situation. Sweden, at present, possesses 2 cruisers; 8 coast defence ships; 14 destroyers; 7 torpedo boats; 14 submarines; and 6 mine sweepers. There are under construction or to be laid down shortly: 4 coast defence ships; 2 destroyers; 4 torpedo boats; and 5 submarines. Undoubtedly the growth of German and Russian armaments is causing concern to their neighbour on the opposite side of the Baltic.

Norway has a small navy, comprising 4 coast defence ships; 22 torpedo boats; 9 submarines; and 4 minelayers—the majority built before the War. But lately there have been ordered 2 destroyers, 2 torpedo boats and 2 mine sweepers, quite a considerable addition to the existing fleet. Denmark is also beginning to show signs of uneasiness. To her present fleet of 2 coast defence ships, 17 torpedo boats, and 8 submarines, there are being added: 2 torpedo boats, 4 submarines, 1 minelayer, and 3 minesweepers—quite an appreciable increase.

Finland, which shares Sweden's feelings in regard to the position in the Baltic, is discussing a fresh programme of construction to supplement her existing fleet of 2 coast defence ships; 5 submarines; 7 motor torpedo boats; 4 gunboats; and a number of small minelayers and minesweepers.

Poland has recently completed a programme of new construction and is engaged in framing a fresh one. Her fleet includes: 4 destroyers; 3 submarines; 1 minelayer; 2 torpedo boats; 2 gunboats; and 6 minesweepers. Two more submarines are in the completing stage.

Estonia proposes to build a number of motor torpedo boats to supplement its existing force of 2 submarines; 1 torpedo boat; 4 minelayers and a number of smaller craft. Latvia possesses 2 submarines, 2 minesweepers and 1 gun-boat; and Lithuania has a patrol vessel; but it is understood that both are negotiating for additional tonnage.

Until the Civil War ends, Spain is unlikely to complete all the ships which are in hand. These include 2 destroyers and 3 submarines building at Cartagena and 2 minelayers at Ferrol. After the deletion of ships lost during the conflict, there are in service: 6 cruisers (divided equally, at the end of 1938, between the Nationalist and Republican forces); 20 destroyers; 12 torpedo boats; 13 submarines; 4 minelayers; 6 gunboats; and many smaller craft.

Portugal's fleet, which has been modernized under the present regime, comprises: 6 destroyers; 8 escort vessels; 2 torpedo boats; 3 submarines; and 4 gunboats. It is proposed to order 3 destroyers, 3 submarines, and 6 motor torpedo boats during 1939.

Greece possesses 1 old armoured cruiser; 1 cruiser-minelayer; 8 destroyers; 13 torpedo boats; 6 submarines; 4

small minelayers; and 2 motor torpedo boats. In addition 2 destroyers are nearing completion, while a number of additional destroyers and 2 submarines are projected.

Turkey has a fleet comprising 1 battle-cruiser; 4 destroyers; 5 submarines, 2 old cruisers used for training; 3 motor torpedo boats; 2 minelayers; and various smaller craft. Four submarines are under construction, and it is proposed to order 4 destroyers and 4 minelayers in 1939.

Rumania has 4 destroyers, 1 submarine, 3 old torpedo boats and some minor war vessels. It is probable that two more destroyers will be ordered.

The Yugoslav navy has 1 flotilla leader; 4 submarines; 6 torpedo boats; 10 motor torpedo boats; 1 aircraft tender; 11 minelayers; and an obsolete cruiser used for training In the completing stage are 3 destroyers, and a fourth has been ordered.

South America. So far as their finances will allow it, the various states in South America are taking steps to renovate their naval forces.

The Argentine navy includes: 2 battleships; 3 cruisers; 4 coast defence ships; 16 destroyers; 3 submarines; and 16 patrol vessels. To these will soon be added 4 escort vessels and another patrol vessel, all building in Argentine yards.

Brazil possesses at present 2 battleships; 2 cruisers; 8 destroyers; and 4 submarines. Under construction are 9 destroyers—six of them in England and three in Brazil—and 6 minelayers.

Chile, which in naval efficiency is second to no other country in South America, has obtained tenders for the construction of two 8,000-ton cruisers. These are needed to reinforce her fleet, which at present comprises 1 battleship; 3 cruisers; 1 coast defence ship; 8 destroyers; and 9 submarines. Like Argentina and Brazil, Chile is beginning to undertake the construction of small vessels in her own shipyards.

Peru has been hindered by the instability of recent governments from making much progress in the modernization of her navy. It includes 2 cruisers, 2 destroyers, 4 submarines and 1 torpedo boat. Ecuador, whose sea force is restricted to 1 gunboat, also appears to be quiescent as regards any increase.

Colombia, whose navy has been reorganized with the assistance of British officers and instructors, has in service 2 destroyers, 2 minesweepers and some vessels of less importance. Venezuela has lately purchased 2 gunboats, bringing her strength up to 5 vessels of this category. Uruguay has 3 patrol vessels and 2 gunboats used for training. Paraguay's force comprises 3 river gunboats.

Mexico has 4 modern escort vessels; 2 older ships of similar class; 10 small gunboats; and 3 patrol vessels. Cuba has 2 escort vessels, recently reconstructed; 5 gunboats; and 7 patrol vessels. Haiti has 2 small patrol vessels. The Dominican Republic, which already possesses an armed transport, has purchased 3 patrol vessels from the United States Coast Guard. Nicaragua has a patrol vessel acquired from the same source. None of the other Central American republics appears to possess any vessels of importance.

Asia. In the Far East, the Chinese navy has practically ceased to exist. Completely overwhelmed by the superior strength which Japan was able to bring into action, its principal ships have all been sunk, though three (the cruisers "Ning Hai" and "Ping Hai" and the escort vessel "Yat Sen") have been refloated and added to the Japanese navy. It is possible that a few small craft survive in the upper reaches of the Yangtze or in harbours where the Japanese have not penetrated, but for practical purposes there is no longer a Chinese fleet.

On the other hand, the Siamese navy, which for many long years underwent no change, has blossomed into a force three times its former strength, most of its new ships being built in Japan or Italy. There are now in service 4 coast defence ships; 1 destroyer; 18 torpedo boats; 4 submarines; 2 escort vessels; 2 minelayers; 3 gunboats; and 8 motor torpedo boats. Additional units, including 2 small cruisers, are under construction

Iran has also developed a small navy from very little under foreign tutelage. This includes: 7 gunboats, 3 motor torpedo boats; and one or two smaller vessels.

Manchukuo, as a pupil of Japan, has acquired 1 destroyer; 15 gunboats; and 6 patrol vessels. Some of these are understood to be river craft.

Of other countries which maintained naval forces, Austria has been absorbed by Germany, and her former flotilla on the Danube has been taken over and reorganized by the German Navy. Czechoslovakia has still a number of armed vessels on the Danube, as has Hungary.

'Iraq has four patrol vessels, a yacht, and a tug, as the nucleus of a navy.

Developments in naval affairs are taking place almost daily, and steady expansion is likely to continue so long as world politics remain in their present troubled condition. But while those countries which desire to remain at peace control the strongest fleets, there is every hope that another World War may be averted, since overwhelming naval strength is a potent argument in the hands of those who desire to restrain aggression and keep the balance of power even. (F. E. McM)

NEGROES (AMERICAN). The Congress of Industrial Organizations at Pittsburgh, Nov. 16, 1938, adopted a constitution with a clause "to bring about the effective organization of the working men and women of America regardless of race, creed, colour, or nationality". At a convention of the American Federation of Labour at Houston, Texas, white workers in building trades, oil, dock, railway, and steamship industries, some of whose unions have colour bars, pledged to fight to remove restrictions on negroes entering their unions.

The National Resources Committee report to the President, May 27, showed that the mean income of southern non-relief negro families in 1935–36 was urban $635, rural $566; comparable incomes for non-relief white families being three times as high. In north central cities of 100,000 and over, mean income of negro families was less than half that of white families ($1,227 and $2,616 respectively).

Because about three-fourths of negro farmers are tenants and share-croppers they are largely affected by the Agricultural Adjustment Act of 1938, which provides that tenant farmers and share-croppers share Federal conservation payments as they share crops, *e.g.* share-tenants having own tools and stock should receive three-fourths of payments.

Greater New York Co-ordinating Committee for Employment, representing over 200 negro organizations, after extended picketing and other mass protest on Aug. 7, signed an agreement with Uptown Chamber of Commerce guaranteeing to negroes at least one-third "white-collar" jobs in Harlem retail establishments and providing an arbitration board of five from each side to settle future disputes.

NEPAL, a kingdom lying between India and Tibet, is now completely independent, but has the closest association with India, both in commerce and in its provision of recruits for the fine Gurkha regiments of the Indian army. There is much really good valley cultivation between lofty mountain ranges, but poverty is great, and the prime minister (who by old tradition is *de facto* ruler of the State) recently celebrated the sixth anniversary of his accession by remitting nearly £200,000 of debt owed to the State by the peasantry. The British Envoy (Col. G. L. Betham) resides at Khatmandu, the capital city (population 80,000). (ME.)

NERVOUS DISEASES. The importance of the disabling influences of psychoneurotic illness has become increasingly recognized. Private practitioners are evincing a greater interest in this branch of medicine, and many are equipping themselves with some of that knowledge which their ordinary medical curriculum did not impart, in order that they may understand something of the pathology of neurotic patients and treat them on rational lines. Outpatient psychological clinics are now established at most of the London general hospitals, and the necessity for a much wider extension of such work both in the cities and elsewhere is realized. More than one vital factor, however, renders such a progressive step difficult.

That a perverted functioning of the mind may be intimately related to crime and more especially to certain anti-social acts, has been accepted by the Prison Commissioners. At Wormwood Scrubbs prison a psychotherapist, specially appointed, holds an official position, and all cases from other prisons which are thought likely to benefit by psychological treatment are transferred there for that purpose. An Institute for the Scientific Treatment of Delinquency for some years has slowly but surely increased its sphere of usefulness in this direction.

Apart from remedying, as far as is possible, any organic mal-functioning, the practitioner now, in the main, treats psychoneurotic disorders by some method of psychological analysis in an effort to trace the basic mental factors that require adjusting. Pure suggestive measures, except in the case of those who cannot intelligently co-operate, are not so commonly employed.

Because of the not infrequent difficulty in eliciting repressed and dissociated mental elements, for some years the administration of narcotic drugs in order to enhance suggestibility and aid analysis has been employed by some as a useful adjuvant to psychotherapy. The barbiturate, sodium evipan, has been of late especially resorted to for this purpose. The dose given is just sufficient to produce surgical anæsthesia. The most suitable period for any analytical treatment has been found to be when the anæsthetic effect is passing off. From the moment consciousness is regained, the patient is asked to cast his mind back over factors which have worried him, and to discuss them quite freely. By such means causative links and buried memories not otherwise obtainable are brought to the surface. Thus analysis is aided and shortened. Such a method, for many reasons, would seem to be preferable to the method of hypnosis, to which susceptibility is so varied and uncertain. The value of sodium evipan in this way would appear to lie in the temporary loosening of control it brings about. The censorship of the mind can for a time be thus lifted without serious concurrent intellectual detriment.

Some psychiatric workers have found some interesting effects in neurotic patients from over-breathing. In hysterical subjects especially, the commonest early sign was a loss of attention and a significant increase in suggestibility. Light hypnotic effects were noted in many such patients by over-breathing alone. The degree of suggestibility present can be easily gauged and tested. While the patient is in a state of light hypnosis, questions can be put to him which may throw light upon the psychogenetic causation of the neurotic illness, or therapeutic suggestions made. Regular deep breathing should be kept up all the time, so that the specially suggestible state, once brought about, is adequately retained. (J. G. P. P.)

NETHERLANDS. On Jan. 3, 1938, Emperor Haile Selassie telegraphed his surprise at the proposed recognition by the Oslo Powers of the Italian empire over Abyssinia. The Queen replied in diplomatic terms, and, a month later, the appointment of Dr. Hubrecht as Minister to Italy conveyed tacit recognition. In April Sir Nevile Bland became British Minister at The Hague. Reliance on the League of Nations had been disclaimed; Germany's actions were followed with watchful concern. The budget deficit of 13 million gulden, incurred in raising the conscript contingent from 19,500 to 32,000, rendered increased taxation inevitable. In March the period of conscripts' service with the colours was extended from five months to eleven, the frontier force was increased, and eleven towns were garrisoned. In May the government accumulated stocks of food as a reserve against emergency. The speech from the throne at the opening of a new session of the States General (September) envisaged economies and fresh taxation for rearmament. Later powers were sought to increase import duties, and to control national production in an emergency. In November the prime minister, Dr. Colijn, said that Jewish children left on the frontier were being admitted and cared for, but the frontier could not be opened; he had approached the Powers with proposals for collective relief. Germany, besides recalling her domestic servants from the country, attempted to extend the Jewish purge to Dutch commerce. By December £43 millions of gold reserves had been transferred abroad. The expected happy event in the royal family occurred on Jan. 31, Princess Juliana giving birth to a daughter (christened, in May, Beatrix Wilhelmina Armgard). On Sept. 6 Queen Wilhelmina celebrated the fortieth anniversary of her accession to the throne. In November King Leopold of the Belgians paid a four-day state visit. The reclamation of the Zuyder Zee reached a further stage (January); there were serious floods in the south, the river Maas overflowing. Activities in the world of transport included the Dutch Motor Show at The Hague, he opening of a new Netherlands Indies–Australia air-service (January), and the maiden voyage of the subsidy-built "Nieuwe Amsterdam" to New York (May). In May, Lloyd's of London granted a permit to a Dutch company to dredge, with the "Karimata", the wreck of the "Lutine", sunk with £2 millions aboard at the entrance of the Zuyder Zee 138 years before. A gold bar valued at £850 was raised, besides many interesting relics, but in September operations terminated, hope of further gains being finally abandoned (previous salvage had recovered £100,000). (H. Fw.)

Area and Population.
Area 13,120 sq. miles.
Population (est. Feb. 1938) 8,651,000.
Chief Towns (pop. 1936) Amsterdam (781,645); Rotterdam (595,448); The Hague (cap.; 482,397).
Ruler. Queen Wilhelmina.
Language. Dutch.
Religion: Christian (1930 Census: Dutch Reformed Church, 2,732,833; Roman Catholic, 2,890,022).

Production 1937:

Wheat	352,700 metric tons
Barley	140,200 ,, ,,
Rye	495,600 ,, ,,
Oats	427,300 ,, ,,
Potatoes	2,500,000 ,, ,,
Beet Sugar	221,800 ,, ,,
Artificial Silk	10,750 ,, ,,
Wood Pulp	121,000 ,, ,,
Lignite	143,000 ,, ,,
Coal	14,321,000 ,, ,,
Pig Iron (1936–37)	290,000 ,, ,,
Superphosphates of Lime	537,000 ,, ,,
Shipbuilding, tonnage launched	183,500 gross tons
,, under construction (Dec. 31, 1938)	247,077 gross tons

Labour and Industry:

Index of Industrial Production av. (1937)	90·9
(1922 = 100) (Sept. 1938)	79·6
Index of Employment av. (1937)	74·1
(1929 = 100) (Sept. 1938)	82·8
Unemployed registered av. (1937)	368,909
,, ,, (Sept 30, 1938)	301,730

Overseas Trade, merchandise 1937:

Imports	1,550,167,000 florins
Exports	1,148,110,000 ,,

Communications 1937:

Roads, suitable for motor traffic	4,800 miles
Railways, open for traffic	2,100 ,,
Rivers and Canals, navigable	4,814 ,,
Airways, continental, miles flown	3,205 ,,
,, intercontinental, miles flown	2,060 ,,
Shipping (June 30, 1938)	2,855,400 gross tons
,, tons net with cargo only—entered	23,340,000; cleared 18,294,000

Finance and Banking:

Revenue, ordinary (est. 1938)	689,950,275 florins
Expenditure ,, ,,	703,590,115 ,,
Public Debt (Dec. 31, 1937)	4,066,400,000 ,,
Notes in circulation (Dec. 27, 1938)	991,634,000 ,,
Gold and silver reserve ,, ,,	1,488,393,000 ,,
Exchange Rate, average (1937)	8·98 florins = £1 stg.
,, ,, (Dec. 29, 1938)	8·56–59 florins = £1 stg.

Education 1937:

Elementary public schools 7,014; scholars 1,144,074
,, superior schools 779; ,, 96,698
Universities 6; students (1936–37) 9,489

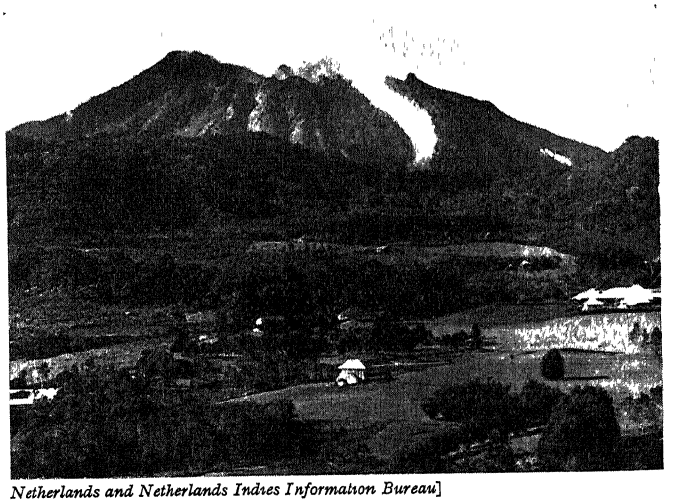
Miscellaneous:

Motor vehicles licensed (Aug. 1, 1937) cars 90,839; buses 3,841, lorries 49,156; cycles 48,974.

NETHERLANDS COLONIAL EMPIRE. Total area (approx.), 845,800 sq. miles; total population (est. Dec. 31, 1936), 75,217,000.

The following table lists the colonial possessions of the Netherlands, together with essential statistics appropriate to each of them, including the mother country:

NETHERLANDS INDIES. Holland's largest colonial possession. The extension of the war in China was responsible for serious deterioration in trading conditions in the colony, as well as in spreading concern over the state of the defences in the territory. Purchases of aeroplanes and aeroplane parts from the United States were greatly accelerated, and in the first eleven months the expenditure rose to over a million pounds sterling, compared with about half a million dollars in the whole preceding year. Seventy planes were thus obtained from the United States before the end of November. Early in the year the first tanks to be seen in the Indies arrived from England, four Vickers Armstrong light models. They were put through severe tests in all kinds of weather, on exceptionally difficult terrain, and caused much astonishment to the natives. In April the visit of the Governor-General of Australia and Lady Gowrie emphasized the close economic and other ties that exist between the two territories. Important discussions took place between the two Governors-General and many social functions enabled the visitors to meet representative leaders in the Indies. On June 15, the Governor of the Indies, Jonkheer A. W. L. Tjarda van Starkenborgh Stachouwer, opened the People's Council, the Volksraad, which has been in existence twenty years. Its sixty members appoint a committee of fifteen who conduct general affairs; of the sixty, 38 are elected and 22 are appointed by the Governor-General. His Excellency reviewed the economic difficulties through which the colony was passing and stated that a deficit of 27 million florins would have to



Netherlands and Netherlands Indies Information Bureau]

SUMATRA: THE SIBAYAK VOLCANO

Country	Area sq. miles (approx.)	Population est. Dec. 31, 1936 (000's omitted)	Capital	Status	Governors, Premiers, etc.
Netherlands	13,120	8,557	The Hague	kingdom	*Ruler:* Queen Wilhelmina. *Premier:* Dr. H. Colijn.
ASIA					
Netherlands Indies, including Java and Madura, Sumatra, Celebes, Borneo (D.), New Guinea (D.), Timor (D.), etc.	774,600	66,400	Batavia	colony	*Governor-General:* Jonkheer Dr. A. W. L. Tjarda van Starkenborgh-Stachouwer.
AMERICA					
Curaçao	386	91	Willemstad	colony	*Governor:* G. J. J. Wouters.
Surinam (Dutch Guiana)	57,700	169	Paramaribo	colony	*Governor:* Dr. J. C. Kielstra.

be taken into account. He warned members that the budget for 1939 would show an estimated shortage of 39 million florins. To reduce this figure to 21 millions, it was hoped to raise 17 million florins by amending the sur-tax on income-tax from 30 to 50 per cent, by raising the wages tax from 3 to 4 per cent, and the sur-tax on import duties paid on the *ad valorem* basis from 25 to 50 per cent The home government would refund nine millions spent on defence. An additional ten millions would be required for arms, however, and this would be met, in part, by the proceeds of a special defence-export duty of 1 per cent. It was estimated that seven millions would be obtained by this tax. His Excellency emphasized the necessity for strengthening the country's defences, and mentioned the formation of tank units, the increase in the number of bombing machines, and the acceleration of the general process of rearming. Throughout 1938 the Fleet was intensively exercised and large seaplanes were introduced into the manœuvres. Recruitment of personnel was encouraged with great vigour, special steps being taken to obtain European-born sailors for the navy. His Excellency promised wide plans for decentralization, among other proposals for native self-government and welfare. Co-operation between various groups in the native political movement was watched with interest and sympathy, and the authorities felt the situation sufficiently changed to enable them to amend, in part, the restrictions in force since 1933 on the right to hold political meetings in public. Satisfaction was expressed in the Colony at the decision to free a number of interned persons, and to permit others who had been exiled to return to the Indies. An interesting educational experiment was the introduction of schools for the study of retail trades. In July the Royal Netherlands Indies' Airways (K.N.I.L.M.) celebrated the tenth anniversary of the establishment of the company and instituted a service to Australia, and on Aug. 30 the first flight to Saigon was successfully carried through. In ten years the K.N.I.L.M. machines have transported about 200,000 passengers, and earned a commendable name for regularity. In the middle of 1938 the extension of mercantile marine activities in the colony necessitated the placing into service of 3 new 15,000-ton motor ships for the Java-Africa route.

Area and Population:
Total area 733,681 sq. miles.
Total population (census 1930) 60,731,025; (est. 1939) 65,000,000. Europeans and Japanese 240,417; Chinese 1,233,214.
Chief towns: Batavia (533,015), Sourabaya (341,675), Semarang (217,796), Bandoeng (166,815).

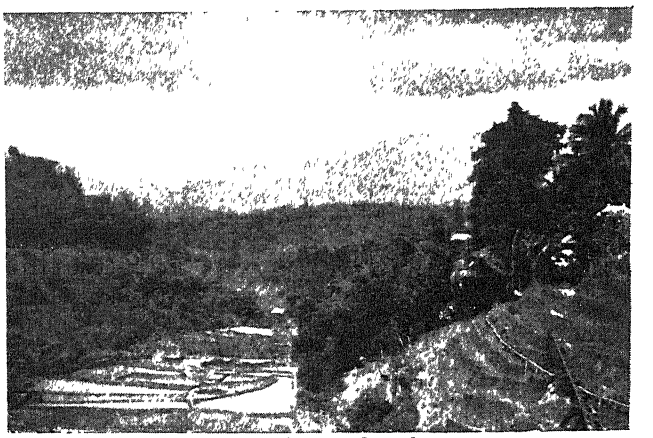
Governor-General:
Jonkheer Dr. A. W. L. Tjarda van Starkenborgh-Stachouwer (1936).

Languages: Dutch (official); Malay, Sundanese, Javanese; English, French, German (Commercial).

Religion: Most natives are Mohammedans, though there



K.L.M. Royal Dutch Air Lines]
BATAVIA: THE "PASAR GAMBIR" (AN ANNUAL FAIR)



Netherlands and Netherlands Indies Information Bureau]
RICE-FIELDS IN JAVA

are several million Christian converts, and about a million Buddhists.

Production 1937:

Cane sugar	1,414,654	metric tons
Rubber	453,623	,, ,,
Petroleum (crude oil)	7,262,070	,, ,,
Coal	1,363,506	,, ,,

Finance and Overseas Trade 1937:
Imports 497,868,000 florins; exports 949,672,000 florins; revenue 561,719,000 florins; expenditure 566,930,000 florins (8·5 florins = £1 stg.).

Roads: 35,900 miles, 4,000 being asphalted.

Education: Nearly 20,000 native schools, with 1½ million attendance; 800 Dutch schools, with 150,000 pupils.

Defence: Compulsory army service; peace strength 1,175 officers, 32,000 other ranks. Navy peace strength 963 officers, 2,982 other ranks. Air force (48 officers, 147 men) included in army total, and being considerably increased. (G. B.)

NEVIS: *see* LEEWARD ISLANDS

NEWALL, SIR CYRIL LOUIS NORTON, G.C.B. (1886–), British Air Chief Marshal, was born at Mussoorie, United Provinces, the son of an Indian Army colonel. On leaving Sandhurst, he joined the Royal Warwickshire Regt. in 1905 and in 1909 transferred to the Gurkhas. While on leave in England in 1911 he qualified as a pilot, and in 1913 was one of the first officers selected by the Indian Army to have special flying instruction at the Central Flying School at Upavon. Back in India he helped form a similar school there; in 1914 he joined the Royal Flying Corps in England.

In 1917 Sir Cyril was appointed to command the 41st (Bombing) Wing, formed to bomb German objectives as a counter-offensive to the air-raids on London and forerunner of the Independent Air Force (created 1918), in which he commanded the 8th Brigade. In 1926 he became Director of Operations and Intelligence and Deputy Chief of the Air Staff, and in 1930 was promoted Air Vice-Marshal and made an additional member of the Air Council. From 1931 to 1934 he commanded the Royal Air Force in the Middle East, and early in 1935 was again appointed to the Air Council as Air Member for Supply and Organization; later that year he was promoted Air Marshal, becoming Air Chief Marshal on April 1, 1937, and Chief of the Air Staff on the following Sept. 1.

Sir Cyril received the C.B.E. and C.M.G. in 1919, the K.C.B. in 1935, and the G.C.B. in 1938. He is married and has three children.

NEWBOLT, SIR HENRY (JOHN), British poet and novelist, was born at Bilston, Staffordshire, on June 6, 1862, and died in London on April 19, 1938. A notice of his life

and work may be found in the *Ency. Brit.*, vol. 16, p. 276. Sir Henry was made a Companion of Honour in 1922, and in 1923 he was appointed official naval historian of the War. From 1927 to 1928 he was president of the English Association. He published little during recent years beyond *My World as in My Time*, 1932.

NEW BRUNSWICK. The death took place in Feb. 1938 of the Hon. Dr. W. F. Roberts, M.L.A., provincial minister of health and labour.

A rearrangement of the provincial Cabinet took place in July. The Premier (the Hon. A. A. Dysart) assumed the chairmanship of the New Brunswick Electric Power Commission; Dr. P. H. Laporte, Edmundston, became minister of public health and labour; the Hon. W. S. Anderson, formerly minister without portfolio, minister of public works; and Mr. E. J. Henneberry, Saint John, president of the council, an office formerly held by the Hon. A. P Patterson, minister of education.

The death took place in October of the Most Rev. John A Richardson, D.D., D.C.L., Archbishop of Fredericton and Metropolitan of the Ecclesiastical Province of Canada. The Very Rev. W. H. Moorhead, D.D., Dean of Fredericton, was elected to the vacant Bishopric.

Area and Population:
Area 27,985 sq. miles.
Population (est. 1937) 440,000 (Indians 1,685).
Chief Town (pop. 1931 census) Saint John (47,514).
Premier. Hon. A. A. Dysart, K.C.
Production:
Field crops (1937) $13,598,000
Dairy produce (1937) $5,505,600
Fisheries (1936) $4,399,735
Minerals (1936) $2,587,891 (coal 368,618 tons; crude petroleum $24,075).
Minerals (total value 1937) . . . $2,788,439
Water power (Jan. 1, 1938), developed . 133,681 h.p.
Manufacturing Industry 1936:
Establishments, 784; capital, $81,468,098; employees, 13,710; gross value of products, $56,225,201.
Communications and Transport:
Roads (Oct. 31, 1936), total 11,614 miles (earth 4,453 miles).
Railways (Dec. 31, 1936) . . . 1,871 miles
Motor vehicles registered (Dec. 31, 1936), cars 26,185; commercial 4,801; buses 58; cycles 31,217.
Finance:
Revenue, ordinary (1935–36) . . . $7,330,142
Expenditure, ordinary (1935–36) . . $7,755,111
Debt, gross bonded (1936) . . . $74,049,920
Education: controlled schools (1936), scholars 92,956.

NEW CALEDONIA. The latest available statistics for this French colony are given below.

Area and Population:
Area (including Loyalty Is., Huon Is., etc.) 7,310 sq. miles
Population (est. Dec. 31, 1936) 53,000 (Whites, 17,215)
Chief Town: Nouméa (cap.; 11,000)
Governor. M. Jore.
Production 1936:
Coffee (export) . . . . . 1,400 metric tons
Copra (export) . . . . . 2,800 ,, ,,
Nickel Ore (metal content) . . 4,900 ,, ,,
Chrome Ore (chromic oxide content) . 21,300 ,, ,,
Overseas Trade 1936:
Imports . . . . . 59,042,000 francs
Exports . . . . . 54,873,000 ,,
Communications 1937:
Roads: motor, 194 miles; total . . 1,500 miles
Railways (Tahiti) . . . . . 19 ,,
Finance 1938:
Revenue, local (est.) . . . 34,000,000 francs
Expenditure, ordinary (est.) . . 34,436,000 ,,
Expenditure, extraordinary (est.) . 264,000 ,,

NEWFOUNDLAND. A British island off the east coast of Canada, Newfoundland has sovereignty over the mainland area of Labrador (*q.v.*). Its existing form of government (a British Dominion) was suspended in 1933, owing to financial difficulties, and a Commission of Government instituted, the Imperial Government assuming responsibility for the island's finances until such time as it would again become self-supporting. During 1938, economic conditions were adversely affected by increased difficulties in the export markets for codfish and by the depression in the newsprint industry. As a consequence, there was considerable unrest and severe unemployment. The mining industry, however, continued to operate at full capacity and there was a considerable expansion of agricultural activity.

The seaplane base at Botwood having been completed, successful transatlantic flights were conducted by Imperial Airways and Pan-American Airways during 1937 and 1938. Substantial progress was made in the construction of a modern aerodrome at Hattie's Camp on the north side of Gander Lake, and an experimental flying-boat station prepared in proximity to the airport. An air-mail service with the United Kingdom will shortly be inaugurated. A radio-telephone service was opened at the end of the year.

Area and Population:
Area Newfoundland 42,000 sq. miles; Labrador 110,000 sq. miles; total 152,000 sq. miles.
Population (est. Dec. 31, 1937) 293,476.
Chief Town (capital) St. Johns (pop. 1935) 39,886
Governor. Sir Humphrey Walwyn, K.C.S.I., C.B., D.S.O.
Language. English.
Religion. Christian (Roman Catholic 94,000; Church of England, 93,000; United Church 76,000; Salvation Army 18,000).
Production 1937:
Fisheries . . . $5,283,000 (cod, $3,986,000)
Wood Pulp (1936) . . . 287,000 metric tons
Iron Ore (metal content) . . 770,000 ,, ,,
Lead Ore ,, ,, . . 27,000 ,, ,,
Zinc Ore ,, ,, (1936) . 64,400 ,, ,,
Gold (1936) . . . . 501 kilogrammes
Silver ,, ... 38·9 metric tons
Labour: cost of relief for able-bodied unemployed during 1937 $1,144,318.
Overseas Trade 1936–37:
Imports, total $23,924,886
Exports ,, ... $28,058,073
Communications 1938:
Roads, main, 1,100 miles; secondary 6,000 miles
Railways, State . . . . . 747 miles
Finance and Banking:
Revenue (1937–38) $10,114,176
Expenditure (1937–38) $13,593,348
Public Debt (June 30, 1937) sterling . £20,319,139
,, ,, ,, ,, dollar . $625,000
Notes in circulation (June 30, 1937), Treasury $82,323.
Exchange Rate as United States dollar (*q.v.*).
Education 1937:
Schools, 1,156 (1936, 1,132).
Scholars on rolls, 62,497 (1936, 59,310).
,, average attendance 40,881 (1936, 39,098).
Miscellaneous:
Motor vehicles licensed (1937), cars 3,666; trucks 1,000; cycles 151; total 4,817.
Wireless receiving-set licences (1938), 11,500.

NEW GUINEA. The island of New Guinea comprises Netherlands New Guinea, administered with the Molucca Islands under the Governor-General of the Netherlands Indies (*q.v.*); Papua, administered by the Commonwealth of Australia; and the mandated territory of New Guinea, including the Bismarck Archipelago and the Solomon Islands (eastern group), administered under mandate by Australia.

It was announced from Canberra in June 1938 that the capital of the mandated territory of New Guinea would be moved to Salamaua, the cost of transfer from Rabaul being estimated at £350,000. There was considerable agitation, especially after Sept. 1938, against any return of the territory to Germany, a course to which the Australian government expressed themselves as strongly opposed.

PAPUA

Area and Population :

Area : mainland, 87,786 sq. miles ; islands, 2,754 sq miles.

Population : White (June 30, 1937), 1,323 ; Native (est.), 275,000 ; Others, 1,015

Lieutenant-Governor. Sir Hubert Murray, K C M.G.

Production 1936-7 : (export figures)

Copra	£191,808
Rubber	£124,172
Gold	£87,003

Overseas Trade 1936–37 :

Imports, £452,056 ; Exports, £524,000.

Airways 1936–37 : (including mandated area)

Mileage flown, 1,466,355 ; passengers carried, 13,100 ; goods carried, 10,912 tons.

Finance 1936–37 :

Revenue £A 171,191 ; Expenditure £A 171,959.

MANDATED TERRITORY

Area and Population :

Area : Mainland, 69,700 sq. miles ; Bismarck Archipelago, 19,200 sq. miles , Solomon Islands, 4,100 sq miles.

Population (June 30, 1937) : White, 4,286 ; Native, 542,394 , Others, 1,611.

Administrator. Brig.-Gen. W. R. McNicoll, C B.

Production 1936–37 : (export figures)

Gold	£2,020,667
Copra	£1,231,309

Overseas Trade 1936–37 :

Imports, £1,311,623 ; Exports, £3,389,072.

Finance 1936–37 :

Revenue £A.481,070 ; Expenditure £A 460,118.

NEW HEBRIDES. A group of eleven large and about eighty small islands in the South Pacific, between lat. 13° and 21° S., and long. 166° and 170° E. The group is a condominium, administered jointly by the British and French Governments, whose local representatives are responsible to the Governors of Fiji and New Caledonia respectively. The two Powers are required to defray the cost of their own administrations, the condominium revenue being used to meet the costs of joint services.

Area and Population :

Area 5,700 sq. miles.

Population (est.) : 60,000 native, 3,026 non-native.

Resident Commissioners. G. A. Joy (British) ; M. Sautot (French).

Production 1937 : (export figures)

Copra, 11,746 tons ; Cocoa, 1,448 tons.

Overseas Trade 1937 :

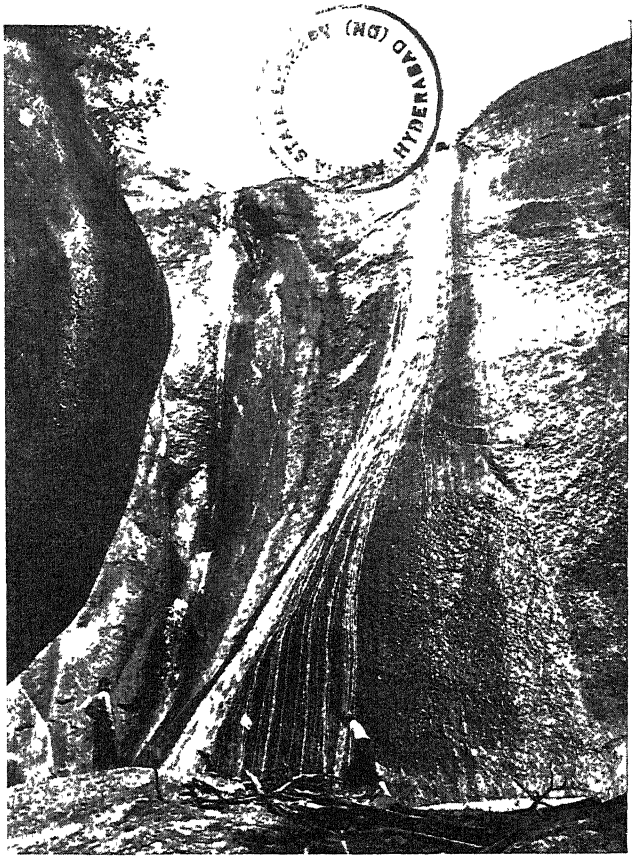
Imports, £152,722 ; Exports, £149,247.

Finance :

Revenue, condominium (est. 1938)	£25,294
Expenditure, condominium (est. 1938)	£23,583
Expenditure on British services (est. 1938)	£10,395

Currency : sterling and francs are legal tender at the rate of 140 francs = £1 stg.

NEW SOUTH WALES. In Jan. and Feb. 1938 celebrations were held in Sydney and elsewhere in New South Wales to mark the 150th anniversary of the founding of the first Australian colony by Captain Arthur Philip on Jan. 26, 1788. The Empire Games were held simultaneously in Sydney. Eight visiting warships included the U.S.S. "Louisville". Many scientific and professional bodies used the occasion to hold their annual meetings in Sydney Six weeks were allotted to the celebrations in the chief country towns in the state.



A.N.T.A.]

BRIDAL VEIL FALLS, MOUNT DROMEDARY, NEW SOUTH WALES

On March 26 a general election was held. The coalition of the United Australia party and the United Country party under the premiership of Mr. B. S. Stevens was returned to office for the third successive period. The representation of the opposing blocs was unchanged, the numbers being as follows : Government coalition, 59 ; Labour, 28 ; "Industrial Labour", 2 ; Independents, 1. The Opposition forces were divided by the disgruntlement of a section with the leadership of Mr. John Lang. This section was led by Mr. R. J. Heffron under the title of the Industrial Labour Movement. It obtained control of the *Labour Daily* newspaper, formerly an organ of the Lang group, and secured the election of Mr. J. Bailey to the state presidency of the Australian Workers' Union. Mr. Lang, however, remained leader of the official state Labour party.

Among the legislation of the year was an Act to establish a 30-m.p.h. traffic restriction in built-up areas, a soil conservation Act, an Act restricting the dissemination of betting information and a measure for the development of the shale oilfield at Newnes with Commonwealth and state government aid. The potential output was estimated at 13 million gallons of crude oil a year.

Some districts of the state suffered serious drought early in the year, one estimate putting the loss of sheep at 10 million head. General economic conditions, however, remained prosperous.

The Housing Improvement Board presented a report to the state government recommending a special housing tax of a penny in the pound on all incomes to finance a re-housing programme costing £30 millions. The government also received an expert report recommending the adoption of electricity schemes to cost £23 millions spread over ten

years. These included the electrification of certain railways and the improvement of distribution. A substantial budget surplus was achieved in 1937–38, revenue and expenditure having each risen by about £5 millions compared with 1936–37. Railway revenue, a good index of general activity, had risen by £1,475,000. In presenting the 1938–39 budget Mr. Stevens declared that the appropriate policy to meet a tendency towards a slackening of business was to exercise prudence in the general budget, while expanding public works expenditure sufficiently to offset any fall in private spending. (H. V. H.)

Area and Population :
Area 309,432 sq. miles.
Population (est. June 30, 1937) 2,692,659.
Chief Towns (pop. Dec. 31, 1938) : Sydney (1,267,350), Newcastle (108,720).

Governor. Capt. the Rt. Hon. Lord Wakehurst, K.C.M.G.

Production 1936–37 :

Wheat	54,837,000 bushels
Butter	119,000,000 lb.
Wool, greasy	503,000,000 ,,
Maize (1935–36)	3,325,000 bushels
Coal (1936)	9,199,466 tons
Gold (,,)	60,739 fine oz.

Industry and Labour : Average number of employees (1935–36) 194,100.
Unemployment (Trade Union returns) average (1937–38) 10 per cent.

Communications :
Roads (March 30, 1937) 46,108 miles fit for motor traffic.
Railways (1936–37), Government . . 6,124 miles

Finance 1937–38 :
Revenue, £60,090,000 ; Expenditure, £59,976,000.
Debt outstanding (June 30, 1937) . . £350,291,000

Miscellaneous :
Motor vehicles licensed (June 30, 1937) : cars, 189,794 ; lorries and vans, 70,321 ; cycles, 23,439.
Wireless receiving-set licences (Dec. 31, 1937) 387,762

NEWSPAPERS. The unsettled conditions prevailing generally throughout 1938 had their repercussions on the world's press besides being all too visible in its columns. On the Continent political considerations led to the suppression of many newspapers—some of long standing and world-wide fame—to increased censorship and " doctoring " of news, and to more interference with correspondents from abroad ; nervousness in the business world before, during, and after the great crisis of September brought about a serious fall in advertising revenue ; while in both Europe and Great Britain economic conditions, occasioning a further rise in the price of newsprint and other production costs, imposed upon managements a financial burden that made new developments difficult.

For British journalism 1938 was, on the domestic side, a particularly full year, for it was marked by a number of agitations connected, more or less closely, with the defence of the " freedom of the press ". First among these came the fight against the application of the Official Secrets Acts (*q.v.*), passed originally to curb the activities of spies, to journalists in cases that bore no sort of relation to spies or spying. The question was still a burning one at the end of the year, but early in Feb. 1939, largely as the result of the energetic action of the National Union of Journalists, the Home Secretary promised an amending Bill which, if passed, would to a great extent relieve the journalist from the operation of these Acts.

The questions of what is known as " press intrusion ", the reform of the libel laws—unchanged in the main since 1888—and the suppression of names in police-court and similar proceedings also have their bearing on the maintenance of press freedom The first is a matter in which the working journalist can do little, though his representative, the National Union, has given a clear lead in the right direction ; but a proposal that has met with some approval is that the trouble might be met by means of a tribunal consisting of two assessors drawn from panels of representatives of proprietors and journalists, presided over by a recognized legal authority. Complaints would be laid before it by the public and, though it would have no sentencing power, it is thought that its decisions would soon result in the formulation of a code of " decency " in news- and picture-getting that no newspaper could afford to ignore. Popular indignation aroused by the " intrusive " methods of certain papers somewhat prejudiced the efforts of newspaper proprietors to remove defects in the antiquated libel laws which rendered them, in common with authors, publishers, and newsvendors, open to frivolous actions. Often these are brought by persons with neither character to lose nor money to risk, in the hope that, rather than face the uncertainties of the law and the prospect of having to pay heavy legal charges in any event, the defendant-designate will submit to blackmail. During the year the Empire Press Union examined into this " gold-digging ", and ultimately Bills, backed by this and other professional and trade bodies, were submitted to parliament. They were well received, and the second was withdrawn early in 1939 on the Attorney-General's promise to set up an expert committee to consider the reform of the libel and slander laws as a whole.

The " suppression of names " evil, with which is bound up a growing tendency on the part of police and coroners' courts to stifle publicity, is best illustrated by the case of the wife of a Metropolitan stipendiary who had to appear in her husband's court—though before a different magistrate—charged with a minor motoring offence ; her name was for some time withheld from the press, being only with difficulty elicited, and the rather undignified controversy that ensued was aired even in the House of Commons.

The dissemination of British news abroad was another topic of discussion during the year, and after a long debate in the Commons (Feb. 16) the government was urged to give full support to schemes to further the wider and more effective presentation of British news abroad in order to counter the tendentious activities of certain governments in the field of propaganda by means of the press, broadcasting, and films. During the year the Foreign Office appointed additional press officers abroad at a cost of £2,000 and between Sept. 1938 and Feb. 1939 paid Reuter's £6,000 for expenses incurred in the agency's increasing, at the government's request, their daily output of news to foreign countries. Other steps were also taken in this direction, especially as regards broadcasting (*q.v.*) ; it is too early to comment on their ultimate effect, though the earliest was probably Herr Hitler's scarcely veiled and unheeded demand for the muzzling of the British press in his Reichstag speech of Feb. 22.

In Great Britain the year opened with persistent rumours of the foundation of two national papers—a Sunday evening, to fill the one long gap in the conveyance of news to the public, and a daily, to be owned, edited, and controlled entirely by and for women. The former has not materialized ; the latter appeared in the modified form of a weekly on Sept. 22—at the height of the crisis—but failed to obtain a footing. While there were no newcomers in the

"national" field, there are no losses to record—if we except that of the *Saturday Review*, which ceased publication in the autumn after a life of 83 years. In the provinces, however, there were again a number of amalgamations, among which may be noticed: the absorption by the *Sheffield Telegraph*, dating from 1855, of the *Daily Independent* of the same city, founded in 1819; the *Sussex Express* (1837) and the *Sussex County Herald* (1870) amalgamated, as did the *Surrey Times* (1855) and the *Surrey Weekly Press* (1900); the *Shanklin Gazette* (1899), also, was incorporated with the *Isle of Wight Guardian* (1883). In London Lord Rothermere announced in April that he had had no financial interest in, and no say in the policy of, the *Daily Mirror* or *Sunday Pictorial* since 1931, and in May retired from proprietorship, handing over control to his son, the Hon. Esmond Harmsworth, who had already succeeded him as chairman of the *Daily Mail*. In April it was also announced that Lord Beaverbrook had transferred his holding in the *Evening Standard* to London Express Newspapers Ltd., proprietors of the *Daily Express*, foreshadowing a greater degree of collaboration between the two papers. At the end of the year Lord Iliffe, deputy-chairman of Allied Newspapers Ltd. and director of the Daily Telegraph Ltd. and other companies, retired from active newspaper business; and among other retirements or resignations are those of Mr. A. L. Cranfield, editor of the *Daily Mail* since 1934; Mr. Percy Fearon who, as "Poy", had been cartoonist on the *Daily Mail* and *Evening News* since 1904; Mr. H. C. Robbins, general manager of the Press Association, after nearly 44 years' service; Mr. S. J. Glanville, assistant editor of the *Daily Telegraph*, with which he had been for over forty years; Mr. C. J. Mill, who died shortly after, city editor of *The Times*; and Sir Alexander Mackintosh, of the *Liverpool Daily Post*, who had been in the Press Gallery of the House of Commons since 1881.

On the Continent suppression and censorship increased in volume and area, though in Belgium, when the foreign office asked the press to set up a commission to impose moderation in comment on authoritarian methods, the request was unanimously refused. Such a commission exists in Switzerland, which further showed its nervousness by suspending for three months the international *Journal des Nations* (Geneva) on account of an article on the four-power conference that decided the fate of Czechoslovakia. The German annexation of Austria, besides setting agencies and correspondents a problem in news transmission, which they surmounted manfully, dealt destruction among Austrian papers old and new, as did later the Sudeten annexations among those of Czechoslovakia, though in each case some were later reissued in Nazified form. In Germany itself the last remnants of press freedom have long disappeared, and after the murder of vom Rath in Paris all Jewish papers were banned indefinitely. In Rumania a number of papers were suspended in January by Dr. Goga, the suspensions being afterwards removed, and in April foreign influence, financial or editorial, was prohibited. Bulgaria also passed measures to eliminate foreign influence, and a law compelling publishers on request to divulge the names of authors and of all persons financing the publication. In France the *Echo de Paris*, a strongly conservative paper notable for the contributions of "Pertinax" on foreign affairs, was merged in *Le Jour*, under the control of M. Leon Bailby.

Among foreign correspondents upon whom notices of expulsion were served during the year are Mr. G. E. R. Gedye, for many years correspondent of the *Daily Telegraph* in Vienna, and Dr. Paul Cremona, who represented the *Observer* in Rome.

See *Report on the British Press*, P.E.P. (Political and Economic Planning), London, 1938, and Wickham Steed, *The Press* (Penguin Special), London, 1938. (L.H.D.)

United States. The year 1938 brought the first real test of the twenty-year effort of American newspapers to develop adequate machinery for gathering foreign news, and the test not only proved the quality of the new machinery but aroused the American public to unprecedented interest in foreign affairs. The story of the Sudeten crisis and the Munich pact in September was told, hour by hour, to the American public by the 2,000 daily newspapers, supplemented by radio bulletins between editions, with a completeness and accuracy never attained before in any country. The feat, furthermore, was a co-operative effort, since no single newspaper stood out from the rest in its covering of the story, but the combined efforts of the Associated Press, the United Press, and the International News Service put the entire story, with all its detail, in the pages of every American newspaper, large or small. In comparison with the sorry performance of 1914–18, when the World War caught the American press unprepared, dependent almost entirely on the exchange services of foreign news agencies, the Czechoslovakian episode showed what had since been accomplished by American newspapers to provide communication machinery and trained personnel to bring to the United States an immediate, accurate picture of world events. A measure of the effort is seen in the report that the Associated Press brought 557,544 words by cable or wireless telephone from Europe during September, ranging from 10,000 to 25,000 words a day and reaching a record-breaking peak of 31,174 words on Sept. 26, as well as 80 radio photographs; the U.P. and I.N.S. reported similar totals that increased cable traffic 30 per cent and press wireless 150 per cent. The story was handled by the largest group of American writers ever assigned to a foreign story, and the huge expense of about 8 cents a word and $90 a picture—totalling a sum beyond the means of any one newspaper—was borne co-operatively by the entire daily press.

While foreign events took leading place among the news stories of 1938, the year was credited by some newspaper authorities with producing more news stories of concern to peoples in many countries than any other twelve-month period since 1918. As listed by the press associations, the outstanding news stories of 1938, on the basis of newspaper space devoted to them, were: (1) Sudeten crisis and Munich pact; (2) Annexation of Austria by Germany; (3) Anti-Semitic campaign in Germany; (4) Republican gains in November elections; (5) New England September hurricane; (6) Fall of Hankow and Canton to Japanese in China; (7) Douglas Corrigan's "wrong-way" flight to Ireland; (8) Howard Hughes's flight round the world; (9) Death of forty-six persons in wreck of the "Olympian" of the Milwaukee railroad in a Montana stream; (10) John Warde's death leap from a New York hotel; (11) Orson Welles's radio "Invasion from Mars" and resulting mass hysteria; and (12) Enactment of the Federal Wages and Hours Law. Other leading events were: the confession of Richard Whitney of the New York Stock Exchange; Joe Louis' one-round knock-out of Max Schmeling; Soviet treason trials; trial of the Tammany leader, Hines; Mexico's expropriation programme; the British-American trade treaty; the Arab revolt in Palestine; the Franco-Italian colonial crisis; and the new United States foreign policy.

Externally, as seen by the reader, most American newspapers exhibited during 1938 marked improvements in physical appearance, with many adopting larger text type and the new "streamline" headlines, using more colour, improving make-up, and instituting new systems of departmentizing news. One survey reported forty per cent increase in news pictures since 1931, with daily newspapers spending $8 millions a year on photos. In most cities, street sale and subscription prices were increased, while the number of pages per issue was greatly reduced because of lack of advertising.

Internally, as seen by newspaper publishers, the year was marked by increasing financial problems: few newspapers made much profit in 1938. While paper prices remained at the high level of 1937, wages and salaries returned to near the levels of 1929, and new taxes and security levies increased fixed expenses; in contrast, advertising revenues decreased between 15 per cent and 25 per cent in most cities. To increase circulation income offered the most obvious solution, with the result that the readers' contribution to newspaper income rose from the old total of 10 per cent or 12 per cent in former years to a new ratio of 20 per cent to 25 per cent at the end of 1938. Reader reaction to new subscription rates caused a temporary decline of perhaps 2 per cent in circulation, but by the end of the year circulations had risen from 10 per cent to 15 per cent. A drive to rebuild confidence in newspaper advertising, led by the Bureau of Advertising of the American Newspaper Publishers Association, enlisted the support of 774 daily newspapers before the end of 1938.

The difficult financial situation resulted in perhaps the largest casualty list among daily newspapers in any single year in history; by the end of October, 41 daily newspapers had suspended or merged and others fell later. Among them were three of the oldest members of the Scripps-Howard string: *The Akron Times-Press, The Toledo News-Bee,* and *The Buffalo Times.* Further consolidation of the newspaper holdings of William Randolph Hearst (75 years old) led to the appointment of Clarence J. Shearn, T. J. White, and Joseph V. Connolly to handle the properties under a ten-year trust. Although no more Hearst newspapers were suspended, *The Boston American* and *Chicago Herald and Examiner* became tabloids, and six of the ten Hearst radio stations were sold.

The chief topic at all publishers' meetings during 1938 was the most puzzling business problem, *i.e.* the Federal Wages and Hours Law, whose effect on daily newspapers was not clearly defined. Although newspaper wages were well above the minimum of the new law, problems were presented by the restricted hours of editorial employees and the ages of newsboys. Discussion of dangers to the freedom of the press headed the programme of two national newspaper meetings. The year 1938 was quieter than 1937 in the American Newspaper Guild, since little activity resulted from its annual convention in Toronto in June. However, nineteen newspapers were affected by strikes, mainly jurisdictional, including the Hearst newspapers of Chicago, where a dispute started on Dec. 4 and was not settled by the end of the year.

NEW YORK CITY. Largest city in the United States with an estimated population (July 1, 1938) of 7,491,790. Mayor, Fiorello H. La Guardia.

The year 1938 will probably be remembered in New York history for ten landmarks: a new charter; State constitutional amendments of vital importance; a Brooklyn crime study; the limit reached in city borrowing; a first high school skyscraper; a three-year residence law for appointments to city service, a new, big, commercial airport; razing of the Sixth Avenue elevated railway; removal of the old "eyesore" post office in City Hall park; a federation of real estate taxpayer associations for massing real estate protests against overtaxing.



Fox Photos]
NEAR WALL STREET, NEW YORK: ONE OF THE STREETS SET ASIDE FOR CHILDREN'S PLAY, WITH ALL TRAFFIC BARRED

The new council of 26, elected by proportional voting, spent most of the year squabbling. Two members were seated who were charged with not having been residents of their boroughs. Fusion-Labour was defeated, the council being controlled by anti-coalitionists, mostly of the old Tammany regime. Council investigations of WNYC and relief were blocked by the mayor, who insisted that under the new charter an order for investigation is a resolution and must be signed by the mayor. Final decisions were due from the highest court early in 1939.

Constitutional amendments may cost a thousand million dollars. Pension plans must be made "contractual relationships" by July 1, 1940, which means $450 millions for fire and police pensions unless some changes are secured before the limit date. For transport unification $315 millions may be borrowed outside the constitutional debt limit. Other tens of millions may be borrowed outside the debt limit for slum clearance. Free transportation to educational institutions may be authorized by the legislature. Religious, charitable, and educational institutions' exemption from taxation may not be reduced or taken away. Council members' travelling expenses to and from their homes must be paid once a week instead of once a session. The old system of referees for condemnation awards instead of courts was revived. County offices not eliminated by Jan. 1, 1939, must continue one to three years; action to force elimination was not resumed till December, and failed after a sixteen-hour session, which

voted to investigate the mayor's sanitation commissioner. Special laws taxing the city may not be passed by the state unless the city officers ask them, no provision is made for any state officer to certify a necessity.

A state special prosecutor began to investigate violations of law by prosecutors and courts—and racketeers—in Kings County, Brooklyn This lines Brooklyn up with Manhattan attacks on brazen racketeers and political leaders The mistrial of the notorious "Hines case", of a well-known district leader charged with taking fees for helping racketeers escape the law, did not prevent the district attorney prosecuting the case, Thomas E. Dewey, from winning almost half the votes for governor.

In April, the comptroller began warning officials that the city was at the limit of its borrowing and would be for three years.

Emergency taxes were continued and two new ones added —one cent on cigarettes for emergency relief, later continued into 1939, and a business occupancy tax of $1 to $6. A five-day week was defeated. Skilled workers were voted increased pay rates for a 35-hour week in order to comply with the "prevailing rate of wage" law.

The highest court decided that surrogates may fix clerks' pay. The mayor called the decision an arrogant interference with the executive branch of government, but the court's decision recalled that it had no choice, since the law gave surrogates that power. Another case promised to clarify the law of slander. The mayor called a heckler "a bum from a gin mill". The heckler sued for damages. On the New York side of the East River it was decided three years ago that it was not slander for the mayor to call a taxpayer a "bum and fakir". Previous decisions in Brooklyn have given less latitude to light-hearted abuse.

Education frequently held the stage: the mayor charged the state department of education with preventing correction of inefficiency in his city's schools; he urged that the state take over support and management of schools; he urged a 65-year retirement limit. An eleven-story skyscraper high school for the needles trade was started; a 17-story skyscraper for Hunter college on its old city site was approved, the value of which site had been used to show how the college could be moved to new buildings in the Bronx at negligible cost; a motor trade school for 1,650 was opened; a junior high school inquiry began; a study of tax sources by teachers started, but the mayor said he hoped they would give it up; new personality and character reports were adopted for children. Four city colleges "went democratic" by having department chairmen and curricula determined by the majority vote of department members. The president of City college retired after 32 years' service, eleven as president.

In preparation for the World's Fair, construction was advanced in the city; a circumferential highway around the water line of Brooklyn and Queens, to cost $28 millions, was started; several open-air barrow markets were abandoned and two enclosed markets opened; big housing developments were authorized with clamorous debate whether they should be in present slum districts or on cheaper land. Civil service cases made important law. Emergency relief workers all had to qualify by competitive tests before they were given permanent posts.

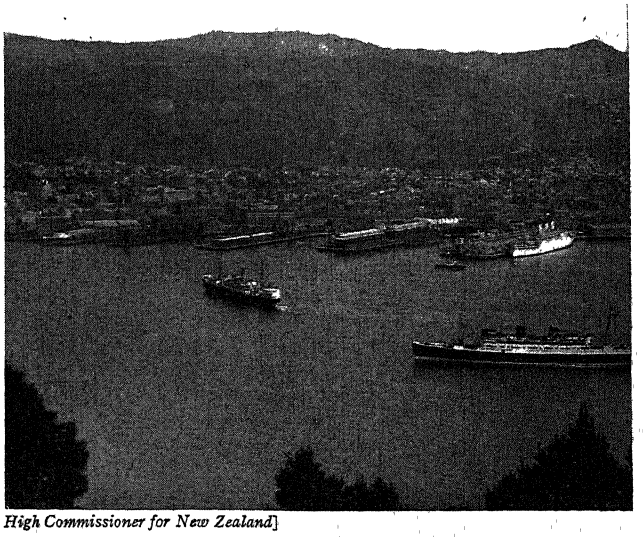
The year closed with an elaborate illustrated report by the tax department entitled, *Knowing the Tax Department and the Tax Commission.* The new federation of real estate taxpayer associations has not yet started publicly analysing such official statements. (W. H. AL.)

NEW ZEALAND. The Labour government having restored triennial parliaments, a general election was held on Oct. 15, 1938. The paper programmes of the rival parties—National and Labour—were not far apart, but differences in emphasis reflected wide differences in approach to issues of political economy. In general, the election was fought on the question for or against a continuation and elaboration of the programme of fabian socialism already largely put into practice by the Labour government. The latter took its stand upon its record, while the National party leaders warned the country of social and financial disasters in store if the record was continued. The result was a decided success for Labour. Although the government suffered a small net loss of seats, it was fighting a united opposition, whereas in 1935 its victory had been the easier by reason of many three-cornered contests. Labour secured a substantial absolute majority of the votes cast. Independents made a weak showing except where they were supported by one or other of the two parties. The results were as follows, the numbers in the previous parliament being shown in brackets: Labour, 54 (55); National party, 24 (19); Independents, 2 (6). A simultaneous poll on the liquor licensing laws produced a large majority for the continuance of the existing system, with a small but rising vote for state control.

Legislation passed in the 1937–38 session of parliament included a Petroleum Act awarding the state the ownership of all oil discovered underground. Favourable technical possibilities were reported, and a large number of applications for prospecting licences were received. A big exploration company was formed representing Australian and American oil interests.

A Pensions Amendment Act lowered the period of residence in New Zealand necessary to qualify for old-age pension from twenty to ten years. An Iron and Steel Industry Act turned the industry into a state monopoly, and authorized the investment of £5 millions through the Reserve Bank. Three commissioners would conduct the industry under the direction of the Minister of Industries and Commerce.

The most important measure of the session was the National Insurance Act. The Act raised the scale of widows' and other pensions, but its chief provision was a



High Commissioner for New Zealand]
WELLINGTON HARBOUR AND CITY WHARVES

scheme of free medical service for all. This would include general practitioner service and free medicine, free maternity treatment and ordinary hospital treatment, but not, at first, specialist or consultant service. The scheme was reckoned to cost in its first full year about £15 millions. Of this, £8,500,000 would be derived from a wages tax and from a registration levy of £1 a year on men, while £5,135,000 represented a renewal of existing benefits, leaving £1,365,000 to be found from new money. The wages tax—to be known in future as the social security contribution—would be raised to 1s. in the pound from the existing level of 8d. The cost of the general practitioner service was calculated on the basis of 15s. per head of the population per annum. The British Medical Association in New Zealand objected to the scheme on the ground of the inadequacy of this emolument as well as on general grounds. The measure became law before the general election.

Economic Affairs. A high level of internal activity and income continued in 1938. The 1937–38 budget yielded a surplus of £810,000, revenue being £4,912,000 more than in the previous year and expenditure £4,574,000 more. A decrease of £271,000 in net revenue from railways was ascribed mainly to higher costs arising from social legislation. The trade balance gave some cause for anxiety, rapidly rising imports not being adequately offset by higher exports. The credit balance of trade available for paying interest and other invisibles was £5,671,000 lower in the year ended March 1938 than in the previous year. The return from wool in the 1937–38 season was estimated to be about £7 millions less than in 1936–37, thanks to a severe fall of prices. The trade balance position was rendered the more awkward by an outflow of capital in anticipation of further socialistic measures, and in December the government promulgated orders providing for control of imports, licensing of exports, and suspension of the Reserve Bank's obligation to give sterling for its notes. The government continued their housing programme energetically. The minister of mines declared that a lack of skilled tradesmen was holding up the building of state houses. He also referred to the shortage of domestic labour and of female labour generally. There was a certain flow of immigration in 1938, but not on a large scale.

Foreign Affairs and Defence. In Sept. 1938, when the crisis arose over Czechoslovakia, the New Zealand delegate, Mr. W. Jordan, was president of the Council of the League of Nations. His utterances expressed a policy of full support for Great Britain in resisting aggression. The general election, however, was in progress in the Dominion, and foreign politics were overshadowed by domestic issues in public discussion.

In the course of 1938 New Zealand introduced a new defence programme. Her two "D"-class cruisers would be replaced by two of the "Leander" class. The naval estimates were raised from £462,000 in 1936–37 to £760,000 in 1937–38. Thirty Vickers-Wellington bombing aeroplanes had been ordered, and 29 Baffin aircraft purchased for the territorial force. The peace strength of the territorial army was raised to 9,000. (H. V. H.)

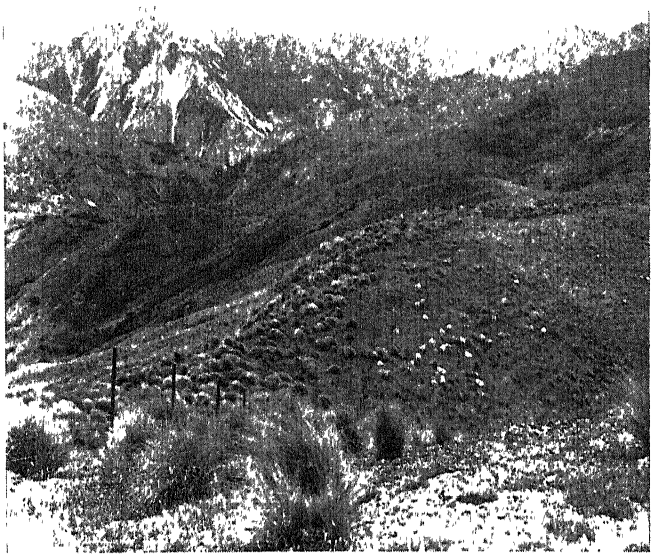
Area and Population:

Area: Dominion proper, 103,415 sq. m.; Other islands, 519 sq. m.

Population: Dominion proper (est. Dec. 31, 1937), 1,601,927 (Maoris 86,362); Cook and other Pacific Islands (census 1936), 16,350.

Chief Towns (1936): Auckland (210,393), Wellington (149,382), Christchurch (132,282), Dunedin (81,848).

Governor-General. Viscount Galway, G.C.M.G.



Fox Photos]
SHEEP FARMING AT MARLBOROUGH, NEW ZEALAND

Language. English.

Religion. Christian (1936 figures, excluding Maoris: Church of England, 600,786; Presbyterian, 367,855 Roman Catholic, 195,261; Methodist, 121,012).

Production 1937:

Agricultural (1936–37)	£8,800,000*
Pastoral (,,)	£47,100,000
Dairying, Poultry (1936–37)	£32,700,000
Wheat	155,900 metric tons
Barley	18,800 ,, ,,
Oats	46,300 ,, ,,
Potatoes (1936)	128,300 ,, ,,
Lignite (,,)	1,302,000 ,, ,,
Coal (,,)	873,000 ,, ,,
Wool (1936–37)	116,889 long tons
,, (1937–38)	131,105 ,, ,,
Butter (export 1937)	2,976,085 cwts.
Cheese (,,)	1,647,255 cwts.
Sheep, number (April 30, 1937)	31,305,818
Cattle, ,, (,,)	4,389,101

Industry and Labour:

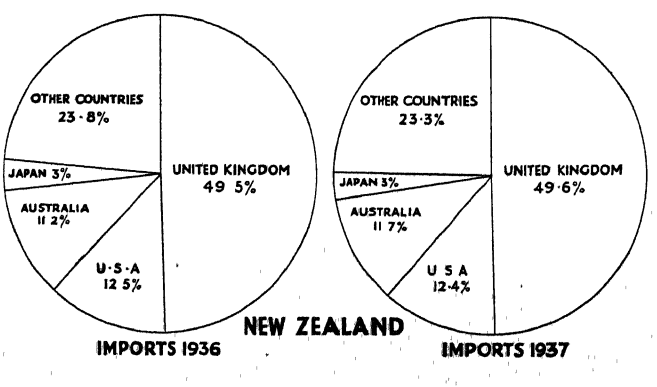
Value of factory production (1936–37)	£26,700,000
Number of employees (March 31, 1938)	123,600
Unemployed registered (Dec. 31, 1937)	8,367
,, ,, (Aug. 31, 1938)	3,929

Overseas Trade 1937:

Imports, merchandise	£56,160,659
Exports, N.Z. produce	£66,208,876
Re-exports	£14,503

Imports (Jan.–Aug. 1937) £39,579,055; (Jan.–Aug. 1938) £36,782,785.

Exports (Jan.–Aug. 1937) £51,012,202; (Jan.–Aug. 1938) £44,913,113.



Communications :
Roads, fit for motor traffic (March 31, 1937), 29,948 miles.
Railways open for traffic, State (March 31, 1937), 3,320 miles.
Shipping (1937) tons net : entered, 2,962,880 ; cleared, 2,877,929.
Finance and Banking :
Revenue (1937–38) £36,059,000 (est. 1938–39) £35,845,000
Expenditure (1937–38) £35,249,000 ,, £35,787,000
Public Debt (March 31, 1938) . . . £290,201,342
Notes in Circulation (Dec. 5, 1938) . . £14,694,000
Reserve (Dec. 5, 1938) Gold, £2,801,000, Sterling, £4,200,000.
Exchange Rate . . . £N.Z.125 = £100 stg.
Education (July 1, 1936) :
Elementary Schools : State, 2,460 ; Scholars, 210,172.
Secondary Schools, 40 ; Scholars, 14,002.
Total No. of Scholars : Elementary, 249,732 ; Secondary, 33,455 ; Technical, 12,481 ; University, 5,218.
Defence Forces. Defence estimates for 1938–39 totalled £2 millions as compared with an expenditure of £1,603,813 in 1937–38.
Miscellaneous
Motor vehicles licensed (Dec. 31, 1937) : cars, taxis, etc., 187,914 ; trucks, 21,194 ; buses, 642 ; motorcycles, 21,314.
Total, all motor vehicles (March 31, 1938) . 280,327
Wireless receiving-set licences (March 31, 1938). 280,407
Telephones, number of subscribers (Dec. 31, 1937) 135,853.
* Values in N.Z. currency unless indicated. (W.H.W.)

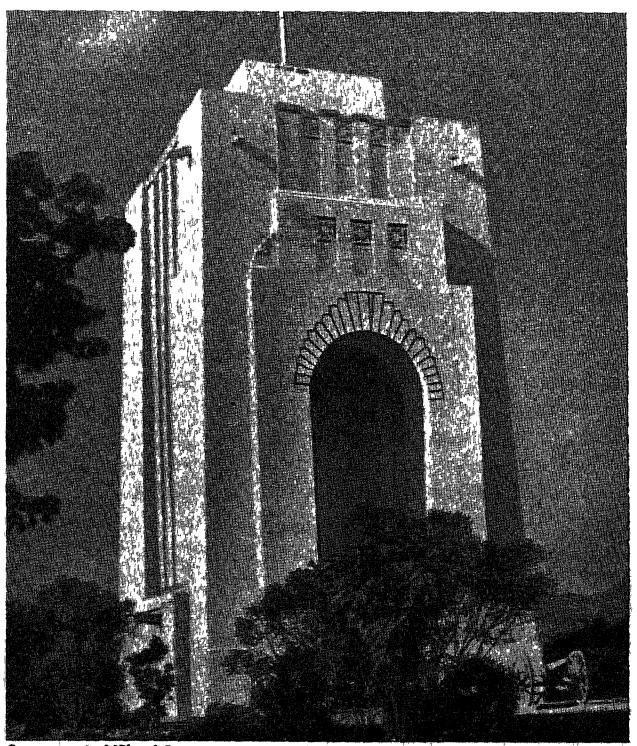
NICARAGUA, a Central American republic ; language, Spanish ; president, Anastasio Somoza. Area 49,200 sq. m. ; pop. (official est. 1935) 638,119 ; Chief cities : Managua, the capital, 60,542 ; León, 47,234 ; Granada, 18,000. Owing to low prices of coffee, the chief export, economic conditions were poor during 1938, and the córdoba declined over fifty per cent in terms of the dollar. Some improvement was evident at the end of the year, however, and plans were being made to thaw frozen credits. Meanwhile, efforts were made to combat the rapidly rising cost of living. Government salaries were doubled in January. Government co-operatives were set up to sell various necessities, including medicines, to the poor at cost, and mercantile profits were restricted by law to twenty per cent. In December, a constituent assembly met to consider constitutional changes. The boundary dispute with Honduras continued throughout the year. On April 14, under an agreement with the United States, the debts of the two countries to each other were cancelled by a United States net payment of $72,000. Trade treaties with France, Great Britain, and Italy were made during the year. Attempts in the United States to revive interest in the proposed Nicaragua canal attracted attention in Nicaragua. The project, variously estimated to cost from $300 millions to $720 millions, would revolutionize Nicaraguan economy. There are 17 miles of railway, and an undetermined amount of short privately owned lines. The 900-mile highway system is being improved and expanded. Imports (textiles, foodstuffs, and machinery) in 1937 totalled $5,621,000, a slight increase. Over half came from the United States, with Germany and Great Britain next. Exports (coffee, gold, and bananas) were $7,038,000, a fifty per cent increase over the record low figure of 1936. Approximately half went to the United States, with Germany and France next. The monetary unit is the córdoba, valued at 11*d.* (1*s.* 10½*d.* in 1937). There are about 700 schools, with an enrolment of about 44,000. (L. W. Be.)

NICHOLAS, Prince of Greece, was born in Jan. 1872, and died in Athens on Feb. 8, 1938. He was the third son of King George I of Greece, a nephew of Queen Alexandra of Great Britain, brother to King Constantine of Greece, and uncle of King George II of Greece. In Aug. 1902 he married the Grand Duchess Helen, sister of the Grand Duke Cyril (*q.v.*). His eldest daughter, Princess Olga, married in 1923 Prince Paul, now regent of Yugoslavia ; the second daughter, Princess Elizabeth, married in 1934 Count Torring-Jettenbach ; and the youngest daughter, Princess Marina, married, in Nov. 1934, the Duke of Kent. Prince Nicholas had an active public career, which was necessarily conditioned by the succession of governmental changes to which his country was subjected during and after the World War. The Prince was a gifted artist, and was the author of *Reminiscences of Fifty Years*.

NIGER : *see* French West Africa and the Sahara.

NIGERIA. The system of "indirect rule" established by Lord Lugard is widely applied to the highly organized emirates of the northern Provinces and in the Yoruba area of the southern Provinces. In the south-eastern Provinces administration through tribal authorities is undergoing a process of reorganization : there are difficulties in determining suitable units on which local government can be based. The comparative stabilization of a population able to gain a living by peasant production has allowed detailed assessment to be undertaken for the purpose of taxation. In some areas more than 60 per cent of the native tax is paid into the native treasuries. The extent of many of these native administrations is considerable : that of Kano has a revenue of some £200,000, and contains a population of some two millions.

Peasant production remains the economic basis of the territory, and the main problem is whether such a system is capable of development that will allow it to hold its own in world markets and provide the funds for social progress. Nigeria is beset by economic difficulties—a fall in the value of the exports of vegetable oil products, the main source of income, has not been offset by a decrease in imports ; steps have been taken to secure economy in expenditure by avoiding expansion, rather than by actual retrenchment. On



Government of Nigeria]
RESERVOIR AT KADUNA, NIGERIA

the other hand, the native administrations held in 1938 reserves amounting to some £1,500,000, and the people have accumulated savings during a brief period of prosperity The dispute in the cocoa trade (*see* GOLD COAST) was also investigated by the Commission of 1938. Recommendations have made for the extension of a co-operative system of marketing

See M. Perham, *Native Administration in Nigeria*, 1937; Hailey, *An African Survey*, 1938. (J L. K.)

Area and Population :

Area, including Cameroons, 372,674 sq m. (Colony 1,381 sq. m.).

Population (est. Dec. 31, 1937), 20,476,795.

Governor. Sir Bernard H. Bourdillon, K C.M G.

Production 1937 : (E indicates export figures)

Cocoa (E)	103,216 tons
Cotton lint (E)	191,749 ,,
Ground Nuts (E)	325,929 ,,
Palm Kernels (E)	337,749 ,,
Palm Oil (E)	145,718 ,,
Kola Nuts (E)	621,635 centals (100 lb)
Rubber (E)	5,763,983 lb.
Hides and Skins, yield	16,680,325 ,,
Tin Ore, mined	14,871 tons
Gold, mined	26,466 oz.
Coal, mined	263,319 tons

Overseas Trade 1937 :

Imports : merchandise, £14,623,674 ; bullion and specie, £3,944,001.

Exports, domestic £19,242,197

Re-exports : merchandise, £193,968 , bullion and specie, £139,500.

Communications 1937 :

Railways, Government . . . . 1,903 miles

Roads, maintained by Government . . 3,984 ,,

,, ,, ,, Native Administrations 8,796 ,,

Shipping, net tons entered, 2,272,412 ; cleared, 2,278,487.

Finance :

Revenue (1937–38) £7,102,484 ; (est. 1938–39) £6,576,835

Expenditure (1937–38) £6,801,286 , (est. 1938–39) £6,881,608.

Public Debt (Dec 31, 1937) . . . £24,764,599

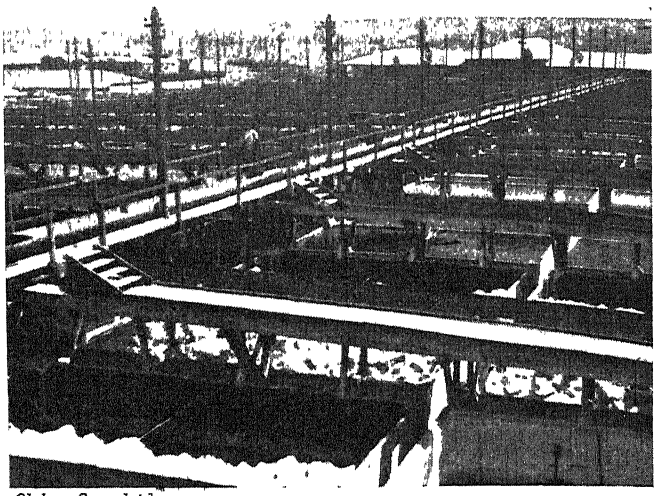
Education June 30, 1937 :

Elementary : Government schools, 199 ; scholars, 10,237.

,, aided private schools, 22 ; scholars, 4,456.

,, other private schools, 322 ; scholars, 9,937.

NITRATES. There are small deposits of nitrate-bearing earth or shale in China, Egypt, and Spain, which are locally used to a small extent for fertilizer, and an output of 6,000–8,000 tons of potassium nitrate in India, but the only natural nitrates exploited on an extensive scale are the caliche beds of northern Chile, which carry 10–25 per cent of sodium nitrate, and which supplied the bulk of the world's nitrate requirements for a century. The maximum output attained was 3,238,000 metric tons in 1929, declining to 439,000 tons in 1933, with a recovery to 1,305,000 tons in the fiscal year 1936–37. Steady progress in the development of the synthetic processes was made following the War, and the natural nitrates industry dropped to a point where, in 1928–29, according to the figures of the British Sulphate of Ammonia Federation, it furnished only 22 per cent of the world supply, although this was the record year of Chilean output. The depression then took a heavy toll of the Chilean industry, while manufactured nitrogen suffered little, and in 1932–33 Chilean nitrate supplied only seven per cent of the world total nitrogen supply. Although the Chilean output has shown a heavy increase since 1932, synthetic production has expanded so rapidly that in 1936–37 the Chilean share of the world total supply had increased only to nine per cent. The synthetic plant capacity now available is far in excess of the total world demand.



Chilean Consulate]

CHACABUCO NITRATE MINE, NORTHERN CHILE

NOBEL PRIZES. The following awards were made for the year 1938 :

Physics.—Prof. Enrico Fermi, of Rome, for proving the existence of new radioactive elements produced by bombardment with neutrons, and for his discovery of nuclear reactions produced by slow neutrons. The award was made on Nov. 10.

Chemistry.—Reserved till 1939.

Medicine —No award.

Literature.—Pearl Buck (*q v*) the American authoress, for her novels of Chinese life, *The Good Earth* and *East Wind, West Wind*. The award was made on Nov. 10.

Peace —The Nansen Office (*q v.*) in Geneva. The award was made on Nov. 17.

NON-INTERVENTION COMMITTEE. The end of 1937 found the Non-Intervention Committee at last, after all the differences of the summer, agreed in principle as to a method of making the policy of non-intervention effective. The British plan, which the Committee accepted, contained three vital features : (1) That international officers were to be stationed in Spanish ports ; (2) That commissions were to be sent to Spain to arrange and supervise the withdrawal of non-Spanish combatants ; (3) That belligerent rights at sea were to be granted to the combatant parties when satisfactory progress had been made with this withdrawal.

In principle, too, by the end of 1937 both the Republican government and General Franco had accepted the British plan. The former, with some show at least of logic, claimed that the latter's Moorish troops should be counted as foreigners, because by international treaty their status was that of subjects of the Sultan of Morocco. General Franco, amongst other reservations, developed the somewhat far-fetched argument that until his government was accorded belligerent rights it could not enter into any agreement binding in international law. None of the reservations made by either side were of such a nature as to obstruct the proceedings of the Committee.

In spite of this, the result of the Committee's work during the year 1938 provided much justification for the words of so temperate a critic as the London *Times*'s diplomatic correspondent (on May 21) : " The Committee has become a by-word for dilatoriness and evasion ; it is at best the leaky dam that Mr. Eden called it". This is not to say that the problems with which the Committee—or, rather, the Chairman's Sub-Committee, which has done most of the

substantial work—has been confronted have not been real and difficult. They have been both, but the interminable delays experienced in obtaining instructions from the governments of certain of the states members give colour to a suspicion of their intention not to enable the work of the Committee to be brought to a successful conclusion

In the early part of the year two questions were predominant. The first was as to the methods by which the withdrawal was to be carried out. The second was as to the point during the withdrawal at which belligerent rights were to be granted Further questions arose as to defraying the costs of the withdrawal, M. Maisky, the Soviet delegate, urging the adoption of a plan whereby Italy would have to pay the most Matters were still further complicated by the French government's perfectly legitimate refusal to accede to the German and Italian demands that its land frontier should be closed while the foreign troops on each side were being counted unless it was first satisfied that the arrival of men and materials by sea would be effectively checked. Meanwhile it was announced, in April, that the Committee was short of funds and that its work would have to be suspended unless states members paid the arrears in their subscriptions.

As a result of the Italian government's anxiety that its Agreement with the British government, signed in April, should come into effect, the Chairman's Sub-Committee at the end of June, and in July the Committee as a whole, approved yet another British plan, whose essential points were: (1) That two international commissions should count the foreign combatants, who should then withdraw according to a fixed time-table; (2) That belligerent rights should be granted when 10,000 non-Spanish combatants were withdrawn from the side with the fewer foreign auxiliaries, and a number from the other side in proportion to its numerical superiority in foreign troops.

The Barcelona government speedily communicated its acceptance of the plan, and the onus of causing further delay was accepted, doubtless with the approval of his foreign sponsors, by General Franco, then hard pressed on the Ebro and in need both of men and materials. When his reply was at length received, it was found to reject the principle of proportionate withdrawal and to accept withdrawal at all only on condition that belligerent rights were granted first. Although Dr. Negrín later carried out his offer of dismissing all foreigners, and 10,000 Italians were withdrawn from General Franco's side to enable the Anglo-Italian Agreement to take effect, no further progress has been made. (W. T. We.)

NORTH BORNEO, STATE OF: *see* Borneo.

NORTHERN IRELAND. In Jan. 1938 Lord Craigavon (*q.v.*) decided to dissolve parliament and appeal to the country on the partition issue. The election took place on Feb. 9, the Unionists gaining two seats, and obtaining a majority of 25 over all other parties: a feature of the results was the small success of the Independent Unionists, who, though opposing the official Unionists on local issues, are in complete agreement with them on non-partition. The full results were: Unionists 39, Independent Unionists 2, Nationalists 8, Labour 1, Independent Labour 1, Independent 2 The Minister of Labour, Major D. G. Shillington, resigned through ill-health, his place being taken by Mr. John F. Gordon, formerly parliamentary secretary to the ministry, who was in turn succeeded by Mr. William Grant. Mr. J. C. Davison resigned his parliamentary seat for Mid-Armagh on becoming Recorder of Londonderry. The newly created post of Ulster Agent in London was filled by Sir James Cooke-Collis, who will seek to promote trade and tourist traffic between Great Britain and Northern Ireland.

The partition issue was much to the front during the year, especially after the Anglo-Irish agreement; the conclusion of this was followed by certain financial concessions to Northern Ireland on the part of the British government, providing that agricultural subsidies would in future be borne on United Kingdom votes, that so long as the agreement was in force the question of the amount contributed by Great Britain to the Ulster Unemployment Assistance Fund would not be reopened, and that means would be found to ensure that Northern Ireland's financial position should remain strong enough to enable her to enjoy social services at the same standard as those in Great Britain.

Larne received a charter as a borough, to operate from May 1939; a scheme for adding 22,000 acres to the City of Belfast was rejected by one vote by the City Council. The new Belfast airport on the harbour estate, adjoining Short and Harland's aircraft factory, was opened in March. The War Office announced that military headquarters, accommodating about 1,000 troops, were to be erected on a 100-acre site at Magheralave Mansion, near Lisburn, to replace the present headquarters at Victoria Barracks, Belfast; barracks are also to be built at Ballymena, and those at Holywood and Londonderry extended.

Area and Population:
Area 5,238 sq. miles.
Population (June 30, 1938) 1,285,000.
Chief Towns (pop. est. June 1938): Belfast (438,086); Londonderry (47,813).
Governor. The Duke of Abercorn.
Language. English.
Religion. Christian (Roman Catholic 33·75 per cent; Presbyterian 31·4 per cent; Episcopalian 27 per cent).

Production:	1937	1938
Wheat, tons	4,406	5,714
Oats ,,	242,758	289,704
Potatoes, tons	867,979	—
Flax ,,	4,187	—
Cattle, number	730,109	731,097
Sheep ,,	828,851	893,431
Pigs ,,	570,058	561,435
Shipbuilding, tonnage launched	74,394	79,468

Trade, External:	
Imports (1937)	£57,115,000
Exports (,,)	£54,358,000
Communications 1937:	
Roads, fit for motor traffic	13,000 miles
Railways, standard gauge 622 miles; narrow 124	,,
Finance:	
Revenue 1937–38	£12,693,000
Expenditure 1937–38	£12,544,000
Education 1937:	
Elementary, schools 1,727; scholars 194,347	
Secondary ,, 76; ,, 13,683	
Universities (Sept. 1937) students 1,587	
Miscellaneous:	
Motor vehicles licensed (Sept. 30, 1938)	56,810
Wireless receiving-set licences (Dec. 31, 1938)	120,126
Telephone subscribers (Sept. 30, 1938)	27,000

NORTHERN TERRITORY (of Australia). The Commonwealth Minister for the Interior, Mr. J. McEwen, speaking in Sydney in Feb. 1938, said that the government fully appreciated the imperative necessity for increasing the population and production of the Northern Territory.

After spending some months among the aboriginals, Dr. Donald Thomson, a leading Australian anthropologist, published a report recommending, *inter alia*: that the remnant of native tribes in the Federal Territory, not yet disorganized or detribalized by prolonged contact with an alien culture, should be absolutely segregated, and that the



Fox Photos]
THE ANTHILLS NEAR DARWIN, NORTHERN TERRITORY

government should strive to preserve intact their social organization and institutions; that the native reserve at Arnhem Land, about 30,000 sq. miles in area, should be created an inviolable reserve for native inhabitants; and that similar steps should be taken to render inviolable by the white man any other native reserves in which the native population had not been detribalized. (H. V. H.)

Area and Population:
Area 523,620 sq. miles.
Population (June 30, 1937): Aboriginals, full-blooded, 15,968; half-caste, 919; white (est. March 31, 1938), 5,552.

Production 1936–37:

Gold	£92,474
Pearl shell	£88,000
Pastoral industry	£483,329

Railways: Government (Dec. 31, 1937) . . 508 miles

Finance:
Revenue (1937–38): actual £60,023; (est. 1938–39) £55,000; from Central Australia Rly. (1937–38) £124,417; from North Australia Rly. (1937–38) £37,768.
Expenditure, Ordinary Appropriation (1937–38) £381,931; (est. 1938–39) £417,090; New Works, Buildings, etc. (1937–38) £103,190; (est. 1938–39) £300,000; Central Australia Rly. (1937–38) £604; (est. 1938–39) £2,000; North Australia Rly. (1937–38) £9,270; (est. 1938–39) £15,300.

NORTH-WEST FRONTIER PROVINCE. Parts of five districts which formerly belonged to the Punjab, with certain tribal areas attached to them, constitute this province; area 13,518 sq. miles; pop. approximately 2½ millions. It is under a Governor (Sir George Cunningham since March 1937), who is also Agent to the Governor-General for a group of transborder tracts commanding the passes into Afghanistan. The province was the last to be affected by the political agitation of recent years; but when the Congress organization set to work in it, a sympathetic Moslem movement developed, and its leaders now control the ministry, with Dr. Khan Sahib as chief minister and three colleagues. The most interesting event of the year was the opening, in April 1938, of the Malakand hydro-electric scheme, designed and started twenty-five years ago, but held up by the war and other causes. The water is carried from the Swat River through a tunnel under the Malakand Pass, and will bring to the province the benefits both of irrigation and of cheap electric power. The capital of the province is Peshawar (pop. 121,866), with the most important of the frontier cantonments. (ME)



Fox Photos]
THE KHYBER PASS, THE INDIA-AFGHAN FRONTIER

NORTH-WEST TERRITORIES. The production of pitchblende concentrates (radium-uranium-silver) from the property of Eldorado Gold Mines, Limited, at Great Bear Lake and the shipment of the ore to the company's refinery at Port Hope, Ontario, were steadily carried on in 1938. The mill capacity has been stepped up more than 35 per cent by the addition of new equipment. The fulfilment of an order from the British government for eleven grammes of radium will occupy about eleven months.

In the Yellowknife area, north of Great Slave Lake, there has been great activity in prospecting for gold, more than 6,000 claims having been staked in this region by the end of the year. Early in September the first gold brick was poured at the Con property of the Consolidated Mining and Smelting Company, this marking the first commercial production of gold from the North-West Territories.

Area and Population:
Area 1,309,682 sq. m. (Franklin 554,032 sq. m.; Keewatin 228,160 sq. m.; Mackenzie 527,490 sq. m. Population (est. 1937) 10,000 (Indians 4,046; Eskimos 4,670).

NORWAY. Germany's *Anschluss* in Austria was followed by the allocation of £1,900,000 (later raised to £2,600,000) for national defence, and the issue of invitations to the Finnish, Swedish, and Danish ministers to attend a conference on possible contingencies (held at Oslo in April), the forerunner of several. It was announced (May) that international developments rendered impracticable the prolongation of the Oslo seven-power pact beyond the provisional year (expiring July 1). Norway voiced her insistence on remaining neutral in any war resulting from action by the League of Nations not approved by her. In June a diplomatic agent to General Franco's provisional government in Spain was appointed. The General Council of the International Federation of Trade Unions met at Oslo and decided (May) against the admission of Soviet unions. Domestic legislation included approval of an amendment to the Constitution prolonging the period of the Storthing from three to four years, and conditions regulating women holding office in the clerical ministry. During the summer, services were opened from Newcastle to Stavanger by a British airline, and from Oslo to Copenhagen and Stockholm by Norwegian lines. In November, Oslo hotels were closed in consequence of a strike. In view of the operation there on Queen Maud (*q.v.*), King Haakon journeyed to London; she died four days after it (Nov. 20) within a week of her sixty-ninth birthday. H.M.S. "Royal Oak" carried her body to Oslo, and, after the lying-in-state at Akershus Castle, she was buried there (Dec. 8). Queen Maud was the last surviving sister of King George V. (H. Fw.)

Area and Population:
Area 124,588 sq. miles.
Population (est. Dec. 31, 1937) 2,908,000.
Chief Towns: Oslo, capital, pop. 253,124; Bergen, 98,303; Trondhjem, 54,458; Stavanger, 46,780.

Ruler. King Haakon VII.

Language. Norwegian.



Topical Press]
HAMMERFEST, NORWAY, MOST NORTHERLY TOWN IN THE WORLD

Religion. Christian (Evangelical Lutheran).

Production 1937 :

Wheat	68,000	metric tons
Barley	129,200	,, ,,
Rye	11,200	,, ,,
Oats	188,500	,, ,,
Potatoes	860,600	,, ,,
Sea fisheries (1936)	1,120,200	,, ,,
Wool	2,700	,, ,,
Wood Pulp	1,045,000	,, ,,
Coal (Spitzbergen 1936)	784,000	,, ,,
Iron Ore (metal content)	740,000	,, ,,
Iron Pyrites	1,050,000	,, ,,
Pig Iron (1936)	167,000	,, ,,
Copper Ore (1936)	22,600	,, ,,
Aluminium	23,000	,, ,,
Nitrates of Soda and Lime	296,000	,, ,,
Shipbuilding, tonnage launched	42,000	gross tons
,, under construction, Sept. 30, 1938	30,600	,, ,,

Industry and Labour :

Index of Industrial Production, average (1937)	127·6
(average 1929 = 100) (Oct. 31, 1938)	136·0
Index of Employment, average (1937)	107·0
(average 1935 = 100), (Sept. 30, 1938)	111·0
Unemployed, number registered (Nov. 30, 1938)	33,861

Overseas Trade, merchandise 1937 :

Imports	1,273,500,000	kroner
Exports	801,900,000	,,

Communications :

Roads (1936) public	24,962	miles
Railways (1936), State 2,270 miles; Private	212	,,
Shipping (June 30, 1938)	4,614,000	gross tons

Finance and Banking :

Revenue, ordinary (est. 1938–39)	530,200,000	kroner
Expenditure, ordinary (est. 1938–39)	472,500,000	,,
Public Debt (June 30, 1937)	1,563,900,000	,,
Notes in Circulation (Dec. 22, 1938)	483,900,000	,,
Gold Reserve (,,)	165,800,000	,,
Exchange Rate	19·90 kroner = £1 stg.	

Education 1935–36 :

Elementary, total number of scholars	369,861
Secondary, schools 199 ; scholars	28,398
Universities and higher schools ; students	7,469

Miscellaneous :

Motor vehicles licensed (Dec. 31, 1936) : cars 36,128 ; taxis 4,146 ; buses 2,738 ; lorries, etc. 23,658 ; cycles 9,673.	
Wireless receiving-set licences (July 1, 1937)	271,974
Telephones, number of subscribers (1936)	103,216

NOVA SCOTIA. In the course of the first session of the 18th Provincial Legislative Assembly, which was opened on March 1 by the Lieutenant-Governor, the Premier (the Hon. Angus L. Macdonald) announced a budget surplus for the second successive year.

Mr. Percy L. Black, a former minister of railways, was elected Leader of the Conservative Opposition in the Legislature. The death took place in Aug. 1938 of the Hon L C. Gardner, Speaker of the Legislative Assembly.

In July the 200th anniversary of the founding at Annapolis in 1738 by Major Erasmus James Phillips of the first Masonic Lodge in Canada was marked by a series of ceremonies taken part in by Masonic representatives from the United Kingdom, the United States, Newfoundland, and all parts of Canada.

Acadia University, Wolfville, celebrated the centenary of its foundation, and Dalhousie University, Halifax, that of its buildings, during the summer of 1938.

Area and Population :
Area 21,068 sq. miles.
Population (est. 1937) 542,000 (Indians 2,191).
Chief Towns (pop. 1931 census): Halifax (59,275) ; Sydney (23,089) ; Glace Bay (20,706).

Premier. Hon. A. L. Macdonald, K.C.

Production :

Field crops (1937)	$10,570,000
Dairy produce (1937)	$7,194,600
Fisheries (1936)	$8,905,268
Minerals (1936) $26,672,278 (copper, 779,307 lb. ; gold, 11,960 fine oz. ; lead, 1,901,712 lb. ; silver, 107,642 fine oz. ; zinc, 6,180,219 lb. ; coal, 6,649,102 tons).	
Minerals (total value 1937)	$30,309,665
Water Power (Jan. 1, 1938) developed	123,437 h.p.

Manufacturing Industry 1936 :
Establishments, 1,158 ; capital, $87,888,353 ; employees, 15,944 ; gross value of products, $67,784,970.

Communications and Transport :
Roads (Nov. 30, 1935) total 14,825 miles (earth, 10,584 miles).
Railways (Dec. 31, 1936) 1,397 miles
Motor vehicles registered (Dec. 31, 1936) : cars 35,820 ; commercial 7,776 ; buses 44 ; cycles 312.

Finance :

Revenue, ordinary (1935–36)	$12,841,266
Expenditure, ordinary (1935–36)	$12,689,548
Debt, gross bonded (1936)	$86,974,113

Education : controlled schools (1936), scholars 116,888.

NOYES, ALFRED, C.B.E., LL.D., Litt.D. (1880–), English poet, novelist, and man of letters, of whom an account will be found in the *Ency Brit.*, vol. 16, p. 582, is reputed to be the only modern poet who could make poetry —even the epic—pay. In recent years, however, he has devoted himself increasingly to prose, though on June 20, 1938, a poem written by him in celebration of Miss Irene Vanbrugh's stage jubilee was recited by Mr. Noel Coward at His Majesty's Theatre.

Mr. Noyes was received into the Roman Catholic Church in 1927, and in 1934 published *The Unknown God*, recording something of his own religious experience while arguing that the assumptions of modern physicists lead inevitably to a belief in God. In 1938 his *Voltaire* (1936), a book in which the great Frenchman is portrayed as one who though bitterly antagonistic to intolerance was sincere in his professions of attachment to the Church, was found by the Holy Office to be " worthy of condemnation " and, without the author being given any details of the charge, was suppressed. Ultimately it appeared that the trouble had probably arisen through translational inaccuracies in the Italian version, the original English publishers (a Catholic house) surrendered the book to a neutral firm, and it was reissued.

For a literary appreciation see Walter Jerrold's *Alfred Noyes* in the Modern Writer's series, London, 1930.

NURSERY SCHOOLS. Progress in the establishment of nursery schools in Great Britain has continued steadily, if slowly, throughout 1938. In November, it was stated in parliament that between Jan. 1 and Oct 31 the increase in accommodation was for 954 children in twelve nursery schools, that fourteen new schools were approved in principle, and four others were enlarged. This brings the total to 106, with accommodation for 8,400 children. Scotland has added six new schools, and Northern Ireland one.

In Great Britain, approximately 140 education authorities have now a nursery school policy either in action or under consideration. Nursery classes in connexion with new and old infants' schools are increasing, but numbers are not available. Under progressive authorities, these classes are staffed, equipped, and conducted on lines characteristic of those followed in nursery schools. (*See* Phœbe Cusden, *The English Nursery School.*)

Throughout the British Commonwealth, the movement is growing, but is hampered by lack of trained teachers and funds. Significant is the decision of the Commonwealth Government of Australia to establish demonstration nursery schools in each of the Australian capital cities through the Federal Health Department. Thus it is hoped to experiment with health measures and with educational procedure, and to demonstrate methods for child nurture which will be made available to the general public. In connexion with this development, Miss Christine Heinig, Ph.B., M.A., has been appointed Principal of a Training College in Melbourne, where directors of kindergartens from other States are taking special training.

In Johannesburg, six " Health Classes " on nursery school lines receive 300–400 children. The Technical College has opened a nursery school in connexion with their Domestic Science College, and a three-year course of training for nursery school work is to begin in 1939. In Pretoria three nursery schools are maintained by the Parents' Association, while in Pietermaritzburg a garden nursery school has been opened.

In Tanganyika the Aga-Khan Central Education Board has decided to open nursery schools.

It is impossible to report progress in the disturbed countries of Europe. In Russia the work is spreading in cities, towns, and villages, and is reaching the backward nationalities of U.S.S.R. In France " Le Congrès national des Institutrices des Écoles Maternelles " met in Marseilles in 1938. Its theme was " l'Ecole Maternelle Agent d'assimilation nationale." In the same year was commemorated the centenary of Mme Kergomard, who founded these schools. The enthusiasm attending these events and their usefulness cannot be over-estimated.

In Scandinavia joint conferences—the last of which was held in Norway—on the education of the pre-school child are important. In Sweden between 4,000 and 5,000 children receive some form of " pre-school " training in kindergartens which are financed privately, or by municipal grants, or by large industrial concerns. In Stockholm, there is a college for training teachers for this work. Norwegian teachers have started " Child Protection Academies " in Oslo. In Finland well-organized kindergartens are assisted by the State. In Denmark, in addition to 79 private nursery schools and kindergartens, there were, in March 1938, 219 institutions providing for the care of 10,121 children of pre-school age. Most of these " day-homes " are privately owned, or financed by some association, but after recognition by the State are eligible for grant. Leaders take two years' training.

It will be seen that while organizations and names vary in different parts of the world, the underlying purpose seems the same. (S. E. D.; G. Ow.)

United States. The latest U.S Office of Education survey, made in 1936, lists 285 of the permanent type of nursery schools. This is a minimum figure, since many fail to report. Of these, 50 per cent are supported by tuition, 27 per cent by universities, 19 per cent by philanthropic organizations, and 4 per cent by public schools

In March 1938, 1,494 emergency schools established by the Works Progress Administration in 48 States, the District of Columbia, and Hawaii, enrolled 44,194 children. Features of this programme are: extensive in-service training of teachers, who through direct contact with young children gain insight into modern training methods; the close integration of health and nutrition services with educational services and effective work in parent education.

NYASALAND. A Colonial Office Commission visited Nyasaland during 1938 under Sir Robert Bell, and has made important recommendations regarding the debt incurred on account of railway construction and the Zambesi bridge. Plans for the development of the protectorate include the introduction of secondary education for Africans and the establishment of a land bank based on the Southern Rhodesian model, also the extension of the road system to assist native production in the northern areas. The reform of the system of native taxation has been undertaken, but the problem of depopulation owing to the migration of labourers to Southern Rhodesia and elsewhere remains one of peculiar difficulty—as many as sixty per cent of able-bodied males are absent from some districts. A Native Welfare Committee seeks to obtain the co-operation of the departments responsible for native welfare. The political future of the territory is uncertain; and the Royal Commission of 1938, under Lord Bledisloe, members of which visited the territory during the year, is to consider the question of closer union between the Rhodesias and Nyasaland. (J. L. K.)

Area and Population:
Area 47,949 sq. miles.
Population (est. Dec 31, 1937) 1,641,223 (Whites 1,894).
Chief Town: Blantyre (capital).

Governor. Sir H. Kittermaster, K.C.M.G.

Production:

Cotton, ginned (1937)	1,800 metric tons
Tobacco (1936)	7,500 ,, ,,
Tea (1936)	3,300 ,, ,,
Maize (1936)	700 ,, ,,

Overseas Trade 1937:

Imports, merchandise	£746,575
Exports, domestic	£887,058
Re-exports	£29,607

Communications 1937:

Roads, main	1,852 miles (125 miles surfaced)
Railways	289 miles

Finance:

Revenue (est. 1938)	£804,832
Expenditure (est. 1938)	£823,329
Public Debt (Dec. 31, 1937)	£5,264,100

Currency: Sterling; Southern Rhodesia silver and copper.

Education 1937:

European:	elementary schools, 4	scholars, 91.
African:	,, ,, 4,112	,, 196,825

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OBITUARIES. The following is a list of some of the prominent men and women who died during 1938 —

Name	Date of Death
Abercrombie, Lascelles, British poet and critic	Oct. 27
Abergavenny, Henry Gilbert Ralph Nevill, 3rd Marquess of, British sportsman	Jan. 10
Adam, Maurice James, British aviator	Sept. 12
Adams, A. Emmett, British song composer	Oct. 30
Ailsa, Archibald Kennedy, 3rd Marquess of	April 9
Alexander, Samuel, O.M., Scottish philosopher	Sept. 13
Alhucemas, The Marquis de, Spanish statesman	Sept. 16
Anstruther, Robert Hamilton, C.M.G., British Admiral	Sept. 26
Appeldoorn, Dina, Dutch musical composer	Dec. 10
Armstrong, Sir Gloster, K.C.M.G., K.B.E., British industrialist	Feb. 6
Ashburton, Francis Denzil Edward Barling, 5th Baron, British sportsman	Mar. 27
Aston, Sir George, K.C.B., British Major-General	Dec. 2
Ataturk, Kamâl, Turkish statesman	Nov. 10
Atholstan, Hugh Graham, 1st Baron, Canadian journalist	Jan. 28
Austen, Major Ernest Edward, D.S.O., British entomologist	Jan. 16
Averescu, Alexander, Rumanian statesman	Oct. 2
Bacon, Sir Edward Denny, K.C.V.O., Curator of the King's stamps	June 5
Bacon-Phillips, James Price, British letter-writer	May 14
Barnard, George Grey, American sculptor	April 23
Barr, Sir James, C.B.E., British physician	Nov. 16
Barrington-Ward, Frederick Temple, K.C., British lawyer	Feb. 22
Batchelor, Sir Stanley, British Indian judge	Jan. 19
Batho, Sir Charles, Bt., British merchant	Jan. 29
Bauer, Otto, Austrian politician	July 4
Bayly, Sir Lewis, K.C.B., K.C.M.G., C.V.O., British admiral	May 16
Beaty-Pownall, Charles Pipon, C.M.G., British admiral	Aug. 17
Beauchamp, William Lygon, 7th Earl, K.G., K.C.M.G.	Nov. 15
Bédier, Joseph, French mediæval scholar	Aug. 29
Beresford, George Charles, British engineer and photographer	Feb. 21
Bertram, Francis George Lawder, C.B.E., British civil servant	Mar. 24
Beyers, Fredrik William, South African judge	Sept. 15
Binding, Rudolf, German poet	Aug. 4
Bond, Henry, British scholar	June 6
Bonner, Carey, British Baptist	June 16
Bourne, Robert Croft, British oarsman and politician	Aug. 7
Bowater, Sir (T.) Vansittart, Bt., British politician	Mar. 28
Bowcher, Frank, British medallist	Dec. 6
Boycott, Arthur Edwin, F.R.S., British pathologist	May 12
Brown, Ernest, American astronomer	July
Brownlie, James Thomas, British trade unionist	Oct. 13
Brunot, Ferdinand, French philologist	Jan. 30
Bukharin, Nikolai Ivanovich, Russian politician and journalist	Mar. 14
Bulloch, John Malcolm, British literary critic	Mar. 6
Burnet, Sir John, R.A., F.R.I.B.A., British architect	July 2
Burnett-Hitchcock, Sir Basil, K.C.B., D.S.O., British lieut.-general	Nov. 23
Burrell, Martin, Canadian politician	Mar. 19
Butler, Sir Harcourt, G.C.S.I., G.C.I.E., British administrator	Mar. 2
Calvert, Thomas Frederick Parker, C.B., C.V.O., D.S.O., British rear-admiral	July 1
Campbell, William Wallace, American astronomer	June 14
Čapek, Karel, Czech dramatist and novelist	Dec. 25
Cardozo, Benjamin Nathan, U.S. Supreme Court judge	July 9
Caroe, William Douglas, British architect	Feb. 25
Carpenter, Charles Claude, C.B.E., British industrialist	Sept. 7
Cave, Countess	Jan. 7
Chaliapin, Fedor Ivanovich, Russian singer	April 12
Chalmers, Robert Chalmers, 1st Baron, G.C.B., British administrator	Nov. 17
Chapman, Cecil Maurice, British magistrate	June 23
Cheetham, Sir Milne, K.C.M.G., British diplomat	Jan. 6
Chope, Richard Pearse, British printer and antiquary	Feb. 8
Chrysostom, Archbishop of Athens	Oct. 23
Clarke, Frank Edward, British politician	July 10
Cobb, Sir Cyril, K.B.E., M.V.O., British politician	Mar. 8
Codreanu, Corneliu Zelea, Rumanian politician	Nov. 30
Cohen, Sir Leonard, K.C.V.O., British philanthropist	April 10
Collett, Sir Charles, Bt., British merchant	Nov. 23
Colvin, Ian Duncan, British journalist	May 10
Connaught, Prince Arthur of	Sept. 12
Coote, Bert, British comedian	Sept. 2
Copeland, Royal Samuel, American senator	June 17
Court, Sir Josiah, British pathologist	Feb. 8
Covadonga, Count of, former Prince of Asturias	Sept. 6
Coward, Sir Cecil, British solicitor	July 27
Crawfurd, Sir Raymond, British physician	Mar. 9
Crichton-Browne, Sir James, British physician	Jan. 31
Crosfield, Sir Arthur, Bt., G.B.E., British industrialist	Sept. 22
Cruft, Charles, British dog-show organizer	Sept. 10
Cyril, Grand Duke of Russia	Oct. 12
Dalmon, Charles, British poet	Mar. 27
D'Annunzio, Gabriel, Italian poet	Mar. 1
D'Arcy, Charles Frederick, Archbishop of Armagh	Feb. 1
Daresbury, Gilbert Greenall, 1st Baron, British agriculturist	Oct. 24
Darrow, Clarence, American lawyer	Mar. 13
Davies, Sir John Thomas, K.C.B., C.V.O.	Mar. 31
Davis, Sir Charles (Thomas), G.C.M.G., British civil servant	Jan 1
Dawber, Sir Guy, R.A., British architect	April 24
Dawnay, Alan Geoffrey Charles, D.S.O., British Major-General	Sept. 28
Dawson, Sir Philip, British politician	Sept. 24
Day, John Godfrey Fitzmaurice, D.D., Archbishop of Armagh	Sept. 26
Deans, Richard Storry, Recorder of Newcastle-on-Tyne	Aug. 31
De Filippi, Filippo, Italian explorer	Sept. 23
Degoutte, Joseph, French general	Oct. 31
Denham, Sir Edward, G.C.M.G., K.B.E., British administrator	June 2
Dent, Hugh Railton, British publisher	Nov. 20
Devonshire, Victor Christian William Cavendish, 9th Duke of	May 6
Dibdin, Sir Lewis, D.C.L., K.C., British lawyer	June 12
Dilley, Sir Arthur, M.B.E., British estate manager	May 2
Dimond, James Henry, former South African Trade Commissioner	Mar. 19
Downes, Sir Arthur, British physician	Mar. 11
Dubé, Bhugwandin, K.C. Indian lawyer	Dec. 11
Dudgeon, Leonard Stanley, C.M.G., C.B.E., British pathologist	Oct. 22
Dyson, William Henry, Australian cartoonist	Jan. 21
East, Edward Murray, American geneticist	Nov. 12
Edgar, Campbell Cowan, British archæologist	May 10
Edström, David, Swedish-American sculptor	Aug. 13
Edwards, A. Clement, British lawyer and politician	June 23
Everett, Sir Allan, K.C.M.G., K.C.V.O., C.B., British admiral	Jan. 22
Fairbairn, Stephen, Australian oarsman	May 16
Fernald, Chester Bailey, American dramatist	April 11
Fey, Emil, Austrian politician	Mar. 16
Firestone, Harvey Samuel, American industrialist	Feb. 7
Fischer, Ottokar, Czech poet	Mar. 3
Fletcher, Constance ("George Fleming"), British novelist	June 6
Fletcher-Thomas, William, British comic draughtsman	Mar. 21
Fleuriau, Aimé Joseph de, French diplomat	Jan. 19
Foster, Sir Harry, British politician	June 21
Fowler, Sir Henry, K.B.E., British engineer	Oct. 16
Francis I, Prince of Liechtenstein	July 26
Frederick, Sir Charles, Bt., O.B.E. ("Jack Spraggon"), English fox-hunter	Oct. 21
Frederick, Pauline, American film actress	Sept. 20
Frere, Walter Howard, D.D., English bishop and religious	April 2
Frobenius, Leo, German anthropologist	Aug. 9
Gann, Thomas W. F., British explorer	Feb. 24
Genée, Alexander, dancer and producer	June 29

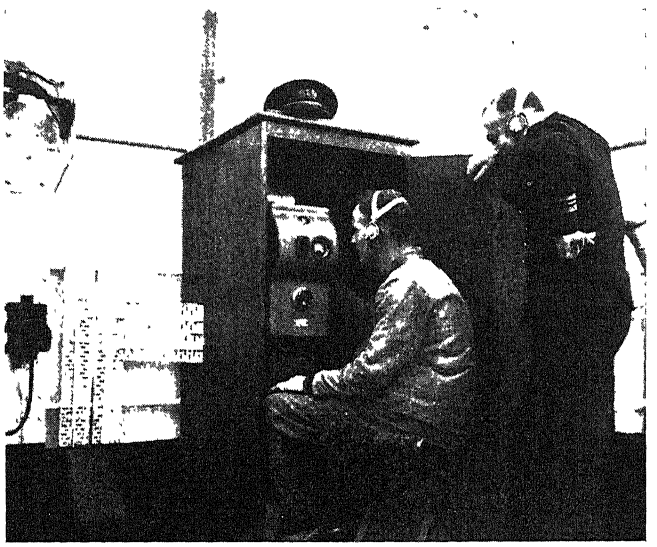
Name	Date of Death
GILBERT, SEYMOUR PARKER, American lawyer	Feb. 23
GILLETT, OWEN FRANCIS, C.B., British admiral	Mar. 21
GISBOROUGH, RICHARD GODOLPHIN CHALONER, 1st Baron, British soldier and politician	Jan. 23
GODOWSKY, LEOPOLD, Polish pianist	Nov. 21
GOGA, OCTAVIAN, Rumanian statesman	May 7
GOLDSMID-MONTEFIORE, CLAUDE, British Jewish scholar	July 9
GORDON, JAMES GEOFFREY, English bishop	Aug. 28
GOWAN, SIR HYDE, K.C.S.I., British administrator	April 1
GRANT, SIR HEATHCOAT, K.C.M.G., C.B., British admiral	Sept. 25
GRAUMANN, SIR HARRY, K.B.E., South African politician	Sept. 19
GRAYSON, CARY TRAVERS, American rear-admiral	Feb. 15
GREIG, JOHN HAROLD, D.D., English bishop	Mar. 28
"GREY OWL", North American Indian naturalist	April 13
GRIGGS, FREDERICK LANDSEER MAUR, R.A., British etcher	June 7
HAIG, SIR WOLSELEY, K.C.I.E., C.S.I., C.M.G., C.B.E., British soldier and administrator	April 28
HALDON, LAWRENCE EDWARD BROOMFIELD PALK, 4th Baron	Aug. 16
HALE, GEORGE ELLERY, American astronomer	Feb. 22
HANBURY, FREDERICK JANSON, British druggist	Mar. 1
HARLECH, GEORGE RALPH ORMSBY-GORE, 3rd Baron	May 8
HARRAP, GEORGE GODFREY, British publisher	Oct. 29
HAWKE, MARTIN BLADEN HAWKE, 7th Baron, English cricketer	Oct. 10
HAYES, PATRICK JOSEPH, Cardinal Archbishop of New York	Sept. 4
HIGHAM, SIR CHARLES, British publicist	Dec. 24
HILL, SIR ROBERT, K.C.B., K.C.M.G., C.V.O., British surgeon vice-admiral	April 18
HILLS, JOHN WALTER, British politician	Dec. 24
HITCH, NATHANIEL, British sculptor	Jan. 28
HLINKA, ANDREJ, Slovak politician	Aug. 16
HOBBS, SIR TALBOT, K.C.B., K.C.M.G., Australian lieut.-general	April 21
HORRIDGE, SIR THOMAS, K.C., British judge	July 25
HOUSE, EDWARD MANSELL, American statesman	Mar. 28
HSIPAW, THE SAWBWA OF	July 12
HUBBARD, WILFRANC, British journalist and archæologist	Feb. 6
HUGHES, JOSHUA PRITCHARD, D.D., British bishop	April 8
HUGHES, SIR THOMAS RAFFLES, British Lawyer	Oct. 24
HUMPHREYS, MRS. W. DESMOND ("Rita"), British novelist	Jan. 1
HUNZA, THE MIR OF	July 24
INSULL, SAMUEL, Anglo-American financier	July 16
IQBAL, SIR MUHAMMAD, Indian poet	April 21
JACKSON, FREDERICK GEORGE, British explorer	Mar. 13
JACOBS, S. W., Canadian politician	Aug. 21
JAMMES, FRANCIS, French poet	Nov. 1
JEPSON, EDGAR, British novelist	April 11
JOACHIM, HAROLD HENRY, British scholar	July 30
JOHNSON, SIR ROBERT, K.C.V.O., Deputy Master of the Mint	Mar. 2
JOHNSTON, SIR REGINALD FLEMING, K.C.M.G., C.B.E., British Chinese scholar	Mar. 6
JOHNSTONE, SIR ROBERT, British gynæcologist	Oct. 26
JONES, ADRIAN, British sculptor	Jan. 24
JONES, WILLIAM EVERARD TYLDESLEY, K.C., British lawyer	Jan. 1
JULIUS, CHURCHILL, Archbishop of New Zealand	Sept. 1
KAUTSKY, KARL, Czech socialist	Oct. 17
KENNEDY, ARCHIBALD ROBERT STIRLING, British Hebrew scholar	Oct. 25
KHOREN, HIS HOLINESS, Armenian Catholicos	April 12
KILLIK, SIR STEPHEN, G.B.E., K.C.V.O., British industrialist	April 17
KING, SIR (FREDERIC) TRUBY, C.M.G., New Zealand physician	Feb. 9
KINNOULL, GEORGE HARLEY HAY, 14th Earl of, British politician	Mar. 19
KIRDORF, EMIL, German industrialist	July 13
KISTLER, THOMAS ANDREW, British freemason	Jan. 18
KNOX, SIR CHARLES, K.C.B., British lieut.-general	Nov. 1
KRESTINSKY, GENRIKH GRIGOREVICH, Russian politician	Mar. 14
KUPRIN, ALEXANDER, Russian poet	Aug.
LANG, ANTON, Oberammergau Passion Play actor	May 18
LEATHES, SIR STANLEY, K.C.B., British scholar and civil servant	July 25
LEBON, ANDRÉ, French author and politician	Feb. 17
LECKIE, JOSEPH ALEXANDER, British politician	Aug. 9
LEDERER, GEORGE, American theatrical producer	Oct. 8
LEIGH, FRANCIS DUDLEY LEIGH, 3rd Baron, British sportsman	May 16
LENGLEN, SUZANNE, French lawn-tennis player	July 4
LEYTON, OTTO, British physician	Jan. 21
LIDDELL, DOROTHY MARY, British antiquary	May 25
LINDO, FRANK CHARLES, British philanthropist	Jan. 22
LINDSEY, MONTAGU PEREGRINE ALBEMARLE BERTIE, 12th Earl of	Jan. 2
LLEWELLYN, DAVID, British aviator	Sept. 21
LOEVENSTEIN, KAREL, Czech industrialist	Feb. 3
LONGMAN, GEORGE HENRY, British cricketer and publisher	Aug. 19
LOVAT-FRASER, JAMES ALEXANDER, British politician	Mar. 18
LOWRY, SIR ARTHUR, C.B., British civil servant	April 6
LUCAS, EDWARD VERRALL, British author	June 26
LUGONES, LEOPOLDO, Argentine poet	Feb. 19
MACBRIEN, SIR JAMES, K.C.B., C.M.G., D.S.O., Canadian police officer	Mar. 5
MCDOUGALL, SIR ROBERT, British philanthropist	Dec. 15
MCDOUGALL, WILLIAM, American psychologist	Nov. 28
MACGREGOR MITCHELL, HON. LORD, Scottish lawyer	April 25
MACKENZIE, SIR COLIN, F.R.S., Australian anatomist	June 29
MACKENZIE, THE HON. LORD (Charles Kincaid Mackenzie), British lawyer	April 1
MCKENZIE, ROBERT TAIT, American sculptor	April 29
MACKINTOSH OF MACKINTOSH, THE, Scottish chieftain	Nov. 14
MACLEAN, GEORGE EDWIN, American educationist	May 5
MACLAUGHLAN, D. S., Canadian etcher	May
MCNEILL, JAMES, Governor-General, I.F.S., 1928–32	Dec. 12
MACPHAIL, SIR ANDREW, O.B.E., Canadian physician	Sept. 23
MALINOV, ALEXANDER, Bulgarian statesman	Mar. 19
MARIE, Queen of Rumania	July 18
MARKS, GEORGE CROYDON MARKS, 1st Baron, British engineer	Sept. 24
MASTERTON-SMITH, SIR JAMES, K.C.B., British civil servant	May 4
MATHIESON, WILLIAM LAW, Scottish historian	Jan. 26
MAUD, Queen of Norway	Nov. 20
MAUDE, AYLMER, British author	Aug. 25
MAXWELL, MARCUSWELL, British big-game photographer	April 21
MAXWELL, WILLIAM BABINGTON, British novelist	Aug. 4
"MAYO, SAM" (Sam Cowan), British comedian	Mar. 31
MELVILLE, FREDERICK, British dramatist	April 5
MENPES, MORTIMER, British artist	April 1
MEREWETHER, SIR EDWARD MARSH, K.C.M.G., K.C.V.O., British administrator	Dec. 28
MERRETT, WILLIAM HENRY, British metallurgist	Oct. 29
MICHALAKOPOULOS, ANDREAS, Greek statesman	Mar. 27
MIDDLETON, SIR GEORGE, English ecclesiastical commissioner	Oct. 25
MILFORD HAVEN, GEORGE LOUIS VICTOR HENRY, 2nd Marquess of	April 8
MILLS, BERTRAM, British showman	April 16
MILNE, SIR BERKELEY, Bt., G.C.V.O., K.C.B., British admiral	July 5
MOFFAT, W. S., British administrator	Aug. 24
MOND, SIR ROBERT, F.R.S., British scientist	Oct. 22
MONTFORD, PAUL RAPHAEL, British sculptor	Jan.
MORGAN, ERNEST ARUNDEL, English churchman	Aug. 17
MORRIS, MAY, daughter of William Morris	Oct. 16
MOTT, SIR BASIL, Bt., C.B., F.R.S., British engineer	Sept. 7
MULLER, J. P., Danish physical trainer	Nov. 16
MURAT, PRINCE JOACHIM, French Bonapartist	May 11
MURRAY, SIR MALCOLM, G.C.V.O., C.B., Comptroller to the Duke of Connaught	Aug. 2
MUSSON, ALFRED, Rhodesian pioneer	Jan. 9
NELSON, EDWARD MILES, British microscopist	July 20
NEWBOLT, SIR HENRY, C.H., British poet	April 19
NICHOLAS, PRINCE, OF GREECE	Feb. 8
NOBLE, SIR JOHN, Bt., British industrialist	Jan. 8
ORR, JOHN, D.D., Bishop of Meath	July 21
OSBORN, E. B., British journalist	Oct. 8
OSSIETZKY, KARL VON, German pacifist	May 4
PAGE, WALTER SUTTON, British Bengali scholar	Feb. 19
PAGET, SIR JOHN, Bt., K.C., British lawyer	Aug. 20
PAGET, LADY MURIEL, C.B.E., British social worker	June 16
PARKER, WILFRED HENRY, British botanist	Jan. 11
PASS, HERMAN LEONARD, English churchman	Jan. 18
PATIALA, MAHARAJA DHIRAJ OF, G.C.S.I., G.C.I.E., G.C.V.O., G.B.E.	Mar. 23
PATTANI, SIR PRABASHANKAR, K.C.I.E., Indian statesman	Feb. 16
PEEL, SIR SIDNEY, Bt., C.B., D.S.O., British banker	Dec. 19
PERAK, H.H. THE SULTAN OF	Oct. 14
PERLEY, SIR GEORGE (HALSEY), P.C., C.M.G., former Canadian High Commissioner	Jan. 4
PERRY, SIR COOPER, G.C.V.O., British physician	Dec. 17
PERRY, SIR HUGH, K.C.M.G., British major-general	Oct. 30
PHELPS, FRANCIS ROBINSON, D.D., formerly Archbishop of Capetown	June 27
PICKERING, WILLIAM HENRY, American astronomer	Jan. 16
PITE, ARTHUR GOODHART, British schoolmaster	Mar. 17
PLESS, H.S.H. HANS HEINRICH, PRINCE OF	Feb. 3
PLUNKET, TERENCE CONYNGHAM PLUNKET, 6th Baron	Feb. 24
POORE, ROBERT MONTAGU, C.I.E., D.S.O., British cricketer and soldier	July 14

Name	Date of Death
POTTS, JOHN, British politician	April 28
PROBYN, SIR LESLIE, K.C.M.G., British administrator	Dec. 17
PULLER, FREDERICK WILLIAM, English religious	Feb. 10
QUINTERO, SERAFÍN ALVAREZ, Spanish dramatist	April 13
RATTRAY, ROBERT SUTHERLAND, C.B.E., British anthropologist	May 14
RENDLE, ALFRED BARTON, F.R.S., British botanist	Jan. 11
RENDLESTHAM, FREDERICK ARCHIBALD CHARLES THELLUSSON, 6th Baron	July 4
RICHARDSON, JOHN ANDREW, Archbishop of Fredericton	Oct. 9
ROBOROUGH, HENRY LOPES, 1st Baron	April 14
ROMEO, NICOLA, Italian industrialist	Aug. 15
RONALD, SIR LANDON, British musician	Aug. 14
RUSHFORTH, GORDON MCNEILL, British archæologist	Mar. 26
RYKOV, ALEXEI IVANOVICH, Russian politician	Mar. 14
ST. DAVIDS, JOHN WYNFORD PHILIPPS, 1st Viscount, British politician	Mar. 28
SAKLATVALA, SIR NOWROJI, K.B.E., C.I.E., Indian industrialist	July 21
SAMPSON, HENRY WILLIAM, O.B.E., South African politician	Aug. 6
SANDERS, SIR CHARLES, K.B.E., British civil servant	Sept. 7
SAVERY, SIR SERVINGTON, British politician	Dec. 27
SCOTT, WALTER, 1st premier of Saskatchewan	Mar. 23
SEAL, SIR BRAJENDRANATH, Bengali philosopher	Dec. 3
SEATON, JAMES BUCHANAN, D.D., English bishop	May 25
SEGRAVE, JOHN RODERICK, C.B., British vice-admiral	Sept. 21
SELANGOR, H.H. THE SULTAN OF	Mar. 31
SELSDON, WILLIAM MITCHELL-THOMAS, 1st Baron, K.B.E., British politician	Dec. 24
SETON-KARR, HEYWOOD WALTER, British explorer	Jan. 12
SEXTON, SIR JAMES, C.B.E., British Labour leader	Dec. 27
SEYMOUR, SIR REGINALD, K.C.V.O., British soldier	Oct. 2
SHACKLETON, SIR DAVID, K.C.B., British politician	Aug. 1
SHARP, JOHN, English cricketer and footballer	Jan. 28
SHAUGHNESSY, WILLIAM JAMES, 2nd Baron, K.C., Canadian lawyer	Oct. 4
SHAUKAT ALI, MAULANA, Indian Moslem leader	Nov. 27
SHAW, TOM, C.B.E., British politician	Sept. 26
SHORT, ALFRED, British politician	Aug. 24
SINGER, SIR MORGAN, K.C.B., K.C.V.O., British admiral	April 27
SMITH, SIR GEORGE, K.C.M.G., British administrator	June 14
SMITH, HERBERT, British trade unionist	June 16
SNELL, SIR JOHN, G.B.E., British electrical engineer	July 6
SOMERVILLE, DANIEL GERALD, British politician	July 1
SPURGEON, SIR ARTHUR, British journalist	June 9
SQUIRE, ROSE ELIZABETH, British civil servant	April 15
STANISLAVSKY, CONSTANTIN, Russian theatrical producer	Aug. 7
STANLEY, SIR GEORGE, G.C.S.I., G.C.I.E., C.M.G., British administrator	July 1
STANLEY, LORD, British statesman	Oct. 16
STANTON, SIR THOMAS, K.C.M.G., British physician	Jan. 25
STARKEY, J. L., British archæologist	Jan. 10
STILEMAN, SIR HARRY, K.B.E., British rear-admiral	Oct. 28
STONEY, EDITH ANNE, British physicist	June 25
STORY, WILLIAM OSWALD, C.B.E., British admiral	Jan. 14
STORY-MASKELYNE, ANTHONY ST. JOHN, British mediæval scholar	Feb. 19
STRATHMORE AND KINGHORNE, THE COUNTESS OF	June 23
STREATFIELD, SIR HENRY, G.C.V.O., C.B., C.M.G., British soldier	July 25
STREET, SIR PHILIP, K.C.M.G., British administrator	Sept. 11
STROUD, WILLIAM, British inventor	May 27
SWYNNERTON, C. F. MASSY, C.M.G., Director of Tsetse Research, Tanganyika	June 11
TALBOT, SIR GEORGE, British judge	July 11
TANG SHAO-YI, Chinese statesman	Sept. 30
TAYLOR SMITH, JOHN, K.C.B., English bishop	Mar. 28
TEARLE, CONWAY, British actor	Oct. 2
TERRY, SIR RICHARD (RUNCIMAN), British musician	April 18
TEWFIK NESSIM PASHA, Egyptian statesman	Mar. 6
THOMAS, HUGH LLOYD, British diplomat	Feb. 22
TIHANYI, LAJOS, Hungarian painter	June 26
TREDGOLD, SIR CLARKSON, K.C., Rhodesian lawyer	July 14
TREE, VIOLA, British actress	Nov. 15
TRENCH, ALFRED CHENEVIX, British publisher	Mar. 13
TROTSKY, LEV LVOVICH SEDOV, Russian emigré	Feb. 16
TRUMBIĆ, ANTON, Yugoslav statesman	Nov. 18
TUCK, EDWARD, American philanthropist	April 30
TURNER, SIR CHARLES, K.C.I.E., British Indian civil servant	Jan. 17
TUTTON, ALFRED EDWIN HOWARD, F.R.S., British scientist	July 14
UDRŽAL, FRANTIŠEK, Czech politician	April 25
VALDÉS, ARMANDO PALACIO, Spanish author	Feb.
VANDERBILT, FREDERICK WILLIAM, American financier	June
VANDERVELDE, EMILE, Belgian socialist	Dec. 27
VAUGHAN, WILLIAM WYAMAR, British schoolmaster	Feb. 4
VENNOLA, JUHO HEIKKI, Finnish statesman	Dec. 3
VONIER, DOM ANSCAR, Abbot of Buckfast	Dec. 26
WALKER, JANE, C. H., British physician	Nov. 17
WALTERS, CHARLES ENSOR, British Methodist	Dec. 17
WARBURG, OTTO, German botanist	Jan. 10
WARNER, ROBERT TOWNSEND, C.B.E., British lawyer	Jan. 4
WARREN, FISKE, American economist	Feb. 1
WARWICK, FRANCES COUNTESS OF	July 26
WATTS, MRS. GEORGE FREDERIC	Sept. 6
WATTS-DUNTON, MRS. W. THEODORE	Sept. 14
WEAVER, JOHN V. A., American poet	June 15
WEBB, SIR MONTAGU, C.I.E., C.B.E., British monetary reformer	May 5
WHITE, PEARL, American film actress	Aug. 4
WHITE, PERCY, British journalist and novelist	July 3
WILKIE, SIR DAVID, O.B.E., Scottish professor of surgery	Aug. 28
WILLIAMS, SIR ROBERT, Bt., British engineer	April 25
WILSON, ARTHUR STANLEY, British race-horse owner	April 12
WISTER, OWEN, American novelist	July 21
WORDSWORTH, CHRISTOPHER, English churchman	Jan. 30
WREFORD, SIR ERNEST, Australian banker	May 10
YAGODA, NIKOLAI NIKOLAIEVICH, Russian politician	Mar. 14
YOHÉ, MAY, American actress	Aug. 28
YOUNG, SIR ARTHUR, G.C.M.G., British administrator	Oct. 20
YOUNG, A. B. FILSON, British author	April 19
YOUNG, DINSDALE THOMAS, British Methodist	Jan. 21
ZANGWILL, LOUIS, British author	May 25

OBSTETRICS: *see* GYNÆCOLOGY AND OBSTETRICS.

OCEANOGRAPHY. In its full significance, oceanography covers a wide range; that aspect which is largely peculiar to it, is hydrography, or better, hydrology. The economic drive which leads to the provision of funds for its prosecution is the connexion with fisheries. Hence those oceans and seas having the closest relation to fisheries are usually those in which hydrological activity is most pronounced, and the Atlantic, particularly the north Atlantic, is the chief centre of interest. Other regions of active hydrological work are the Yellow and Japan Seas, the neighbouring Pacific Ocean, and, on account of whaling, the Southern Ocean.

This connexion also influences the direction of hydrological investigations. That the circulation—mainly, the tropospheric circulation—of the Atlantic influences the fisheries on both sides is generally agreed, but the manner in which it does so is far from clear. The Gulf Stream, for example, is not a constant flow, in either the volume of water or the quantity of heat which it bears north-eastwards. According to the older theories of circulation, a change in the Gulf Stream (due to changes in the trade winds) was expected to make itself felt in the waters of north-west Europe at a later date, in the same sense, *i.e.* an increase in the transport of water was expected to give rise to warmer conditions in European waters. But the variations so far observed in the Gulf Stream are not sufficiently great to account for the considerable changes which undoubtedly occur in the conditions on the fishing grounds. The principal feature of the North Atlantic circulation is an anticyclonic eddy, centred on the Sargasso Sea. Hydrodynamical principles require that, should the current increase, the thickness of the warm centre must increase too. If the volume remains constant, the diameter of the eddy must contract. In these circumstances, the water reaching the European coasts would be cooler. The two theories may thus be in opposition. Possibly also changes in water temperature on these coasts may be effected mainly by changes in the westerly winds across the Atlantic.



Fox Photos]
H M S. "CHALLENGER": THE ECHO-SOUNDING APPARATUS FOR CHARTING THE OCEAN BED

Considerations of this nature have led to an organized attempt, on an international basis, to study the fluctuations of the Gulf Stream and the circulation of which it forms part. In the western Atlantic the "Atlantis" (U.S A.) and the "Culver" (U.K) began co-operating in 1938, and ships from Denmark, Germany, Norway, and Scotland undertook cruises in the early summer in the Azores and Faroe regions. Germany has continued her survey of the north Atlantic begun in the previous year. Difficulty has been experienced in finding sufficient staff and equipment for as thorough and frequent a programme of regular observations of the circulation as could be desired, but it is hoped to cover this deficiency by restricting the regions of observations to key positions.

In the Southern Ocean, the "Discovery" (U K) completed her second circumpolar voyage, to compare with that of 1932, and has begun a series of sections southwards from the Cape of Good Hope, undertaken to study seasonal fluctuations.

In addition, the usual hydrological observations have been undertaken in the narrower seas bordering the oceans. The majority of the Atlantic data will be published in the *Bulletin Hydrographique* of the International Council for the Exploration of the Sea, and the Pacific data, mainly Japanese, in the bulletins of the Stations in Tyôsen and Tokyo, and of the Imperial Marine Observatory, Kobe. The activities of the Soviet Union in the Kara and similar seas are not so well known as they might be, owing partly to the difficulties of the Russian language and partly to the fact that Russia is not now a member of the International Council, through which most of the countries of north-west Europe are brought into co-operation. The spectacular drift of the Soviet party on the ice finished in February, after a journey of some 1,000 miles. About a score of serial hydrological observations were made.

There has been progress in the technique of the study of oceanic flow, mainly in the direction of the relationship between the distributions of salinity, temperature, and oxygen content. Borrowing once again from meteorology, the method of isentropic analysis has been applied to hydrology, with promising results; that is, the distribution of a property on a surface of constant entropy is studied. In this case, the σ^t-surfaces were used as a sufficient approximation. The method is an extension of the German *Kernschicht* principle, which was largely employed in obtaining the results referred to in the *Ency. Brit. Book of the Year*, 1938. Further studies have been made also of the degree to which the minimal oxygen concentrations are determined by biological activity or the water circulation.

A number of reports from expeditions undertaken in earlier years has appeared; two "Meteor" (1925–27) reports, one on the morphology of the Atlantic as a whole and one concerned with hydrodynamical calculations, one based mainly on the Norwegian expedition to Spitzbergen in 1931, one summarizing the Danish expeditions to Icelandic waters from 1903 to 1936; and one on the cruise of the "Président Théodore-Tissier" (France) in the south-eastern north Atlantic in 1937. An account is given of the voyage and preparations for the "Snellius" (Netherlands) expedition to the western Pacific in 1929–30, together with a report on hydrological work. A study of the nitrogen cycle in the Indian Ocean is based upon observations made on the "John Murray" (U.K.) expedition to the Indian Ocean in 1933–34 A survey of the phosphate and silicate in the Southern Ocean, based upon the work of the "Discovery", shows that these salts are removed from the Antarctic waters by the north-going surface and bottom currents, and are brought back by the south-going "deep" current. Maximal concentrations of silicate are related to the distribution of diatoms and their mortality.

A system of nomenclature and units by which various constituents of sea water are most conveniently expressed has been published by the International Council for the Exploration of the Sea. As it was drawn up in collaboration with workers all over the world, it should prove of more than merely domestic use. Work has also been done on the standardization of methods for submarine photometry.

A new instrument has been described, the bathythermograph, by which continuous records of temperature against depth can be obtained. This description appears in a new journal, the *Journal of Marine Research* (New Haven, Conn., U.S.A).

References to all the work mentioned above may be found in *Annalen der Hydrographie und Maritimen Meteorologie* (Berlin) and *Journal du Conseil Permanent International pour l'Exploration de la Mer* (København). *See* also FISHERIES. (J. R. L.)

OFFICIAL SECRETS ACTS. The first British Official Secrets Act was passed in 1889 to meet the case of a Foreign Office employee who had disclosed an important diplomatic document; it provided that any person who communicates to any person not authorized to receive it information that has been entrusted to him in confidence by any person holding office under His Majesty shall be guilty of a misdemeanour. This was strengthened in 1911 by a second Act (drawn up at the instance of the Committee of Imperial Defence), and again in 1920 by an amending Act, the general purpose being to prevent the disclosure by public servants, to the detriment of State or national interests, of information imparted to them in the course of their duty. Section 6 of this Act gave the authorities exceptional and drastic powers of interrogation, the then Attorney-General, Sir Gordon Hewart, specifically stating on behalf of the government that these would be applied only in cases of espionage.

During recent years the Acts have been successfully invoked in many charges such as the conveyance of secret information to foreign powers; but they have also come to be used for other purposes, and in April 1938, the Attorney-

General of 1920, now Lord Chief Justice, dismissed the appeal of a Lancashire journalist convicted under Section 6 for refusing to divulge to the police the source of information that he had obtained from a non-confidential police document regarding a wanted man, and had published in the ordinary course, the Court holding that a police officer is a "person holding office under His Majesty". The matter was raised in parliament, and eventually (May 12) the Home Secretary refused to sponsor amending legislation confining the operation of the Acts to offences prejudicial to the safety of the State, though he undertook that the special powers would be used only on authorization by the Attorney-General or Home Secretary. As this provided no adequate safeguard to the freedom of the press Mr. Dingle Foot, M P., on May 24 introduced an amending Bill, and the National Union of Journalists, the National Council for Civil Liberties, and other bodies took steps with a view to the restriction of the Acts to their original purpose.

Meanwhile, on June 27, Mr Duncan Sandys, a conservative M.P. (son-in-law of Mr. Winston Churchill) and a lieutenant in the Territorials, had complained in the House of Commons that, when called upon by the Attorney-General to disclose the source of certain information relating to aircraft defence which he had embodied in the draft of a question to the Secretary for War, he felt himself to be threatened with the application of the Official Secrets Acts to oblige him to make the disclosure. This incident was the subject of an inquiry by a select committee, in whose majority report (Sept. 28) the Attorney-General was acquitted of any intention to threaten Mr. Sandys, while the minority report (Oct. 18) condemned the law officer's conduct as "a gross violation of the proper and traditional relationship between members of parliament and ministers of the Crown".

A fresh Bill for the amendment of Section 6 of the 1920 Act was introduced by Lt.-Comdr. Fletcher, and after further representations an amending Bill restricting to cases of espionage the use of special powers of police interrogation conferred by that section was introduced in Feb. 1939. (L. H. D.)

OGILVIE, FREDERICK WOLFF (1893–), Director-General of the British Broadcasting Corporation, after gaining a first-class in Classical Moderations at Balliol in 1913, served throughout the World War (losing a hand at Hill 60), and from 1920 to 1926 was a fellow and lecturer at Trinity College, Oxford, and bursar from 1920 to 1922. From 1926 till 1934 he was in Edinburgh as professor of Political Economy, and during that time also served as director of the Edinburgh chamber of commerce (1927–30), as a member of the university council (1932–34), as chairman of the joint advisory committee on adult education for S.E. Scotland (1930–34), as a member of the economic committee of the agricultural research council, and in other capacities, besides being vice-chairman of two trade boards and a member of the Food Council of Great Britain. In 1934 Mr. F. W. Ogilvie went to Belfast as president and vice-chancellor of Queen's University, and while there served on various educational and unemployment committees. In July 1938, he was appointed to his present position, and succeeded Sir John Reith (*q.v.*) on Oct. 1.

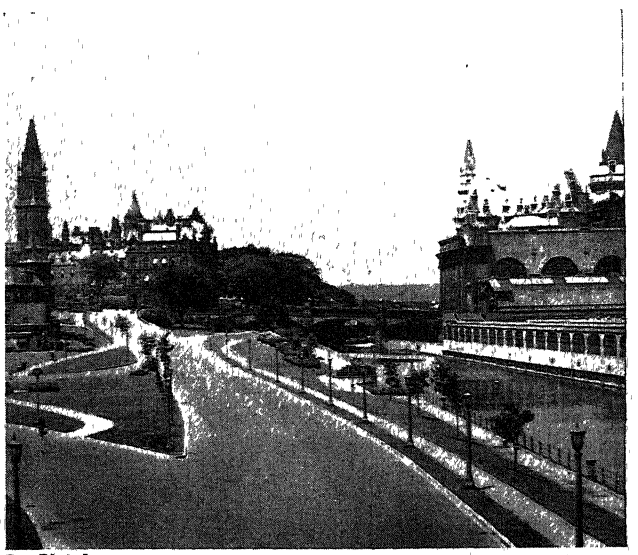
Mr. F. W. Ogilvie is a contributor to the *Encyclopædia of Social Services* and other publications, and author of *Industrial Conflict* (1926) and *The Tourist Movement, an Economic Study* (1933). He is married, and has three sons.

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OMAN: *see* ARABIA.

ONTARIO. The strained relations between Mr. Mitchell Hepburn, the Provincial Liberal premier, and Mr. Mackenzie King's Dominion Liberal government grew more acute still during the year 1938. The first flare-up came in February, after the Federal Minister of Labour had refused a request that his department should contribute a larger share of Ontario's relief costs. Mr. Hepburn said in a speech that Ontario would no longer allow itself to be sandwiched between a reluctant Federal government and impoverished municipalities. Ontario had continually been opposed by the Federal government, which had added to its consumers' burdens by refusing to permit the export of power. In August Mr. Hepburn announced that his government would have no further discussions with the Rowell Commission on Dominion-Provincial relations because the Federal government, in violation of their pledges that there would be no tax changes till the Commission reported, had in the previous session enacted two new tax measures, which were a further invasion of the provincial field of taxation. Finally, in December Mr. Mackenzie King associated himself with accusations by two of his Ministers that Mr. Hepburn and Mr. Duplessis, Premier of Quebec, had been conspiring in an unnatural political alliance to oust Mr. King from the leadership of the Dominion Liberal Party, in order to procure the establishment at Ottawa of a government which would be under the ægis of Ontario and Quebec. In these exchanges Colonel Drew, new leader of the Ontario Conservatives, inclined to the side of Ottawa. He said the proper way to get back to the idea of a strong central government was for Ontario, the largest province, voluntarily to hand back to the Federal administration jurisdiction over all matters of national character and to retain only those necessary for efficient carrying on of provincial government.

In March Mr. Croll, Minister of Public Welfare, introduced a measure in the Legislature requiring that applicants for marriage licences shall present medical certificates declaring them free from venereal disease fifteen days before the date of the proposed marriage. A resolution asking the Dominion government to pass a bill legalizing sweepstakes under provincial supervision was passed in April. In July Mr. Hepburn was reported missing for more than twelve hours while on a flight over Alaska and the Yukon, and an R.A.F. search for him was very nearly organized.



Fox Photos]

OTTAWA, THE RIDEAU CANAL

Area and Population :
Area 412,584 sq. miles.
Population (est. 1937) 3,711,000 (Indian 30,368).
Chief Towns (pop. 1931 census): Toronto (631,207); Hamilton (155,547); Ottawa (126,872); London (71,148); Windsor (63,108).
Premier. Hon. Mitchell Hepburn.
Production :
Field crops (1937) $150,367,000
Dairy produce (1937) $99,631,600
Fisheries (1936) $3,209,422
Minerals (1936): $184,532,892 (arsenic, 1,365,606 lb.; cobalt, 887,591 lb.; copper, 287,914,078 lb.; gold, 2,378,503 fine oz.; nickel, 169,739,393 lb; platinum, 131,551 fine oz.; silver, 5,219,366 fine oz.; natural gas, m. cu. ft., 10,006,743; petroleum, crude, $350,767)
Minerals (total value 1937) . . . $229,938,108
Water Power (Jan. 1, 1938), developed . 2,577,380 h.p.
Manufacturing Industry 1936 :
Establishments, 9,753; capital, $1,588,484,130; employees, 288,992; gross value of output, $1,547,551,931
Communications and Transport :
Roads (Mar. 31, 1937) total 70,897 miles (earth 19,996 m.).
Railways (Dec. 31, 1936) . . . 10,746 miles
Motor vehicles registered (Dec. 31, 1936): cars 489,610; commercial 69,256; buses 704; cycles 4,506.
Finance :
Revenue, ordinary (1935–36). . . $90,321,896
Expenditure, ordinary (1935–36) . . $103,664,602
Debt, gross bonded (1936) . . . $602,027,288
Education. Controlled schools (1936), scholars 673,706.

OPHTHALMOLOGY: *See* EYE, DISEASES OF.

ORANGE FREE STATE. The country is mainly pastoral, but wheat farming is carried on. A dam to contain 125 million gallons has been completed at Kalfontein, and vast areas of farming land will now be immune from drought. Coal is mined, but little gold has been discovered, though relatively large quantities of diamonds are found in alluvial diggings.

The province's proportion of native population to Europeans is the lowest in the Union of South Africa. The chiefs in the three native reserves have limited judicial powers: Native Reserve Boards draw funds from local taxation, and have a wide range of powers in local affairs.

Area and Population :
Area 49,647 sq. miles.
Population (est. June 30, 1938): 790,800 (European 210,000).
Chief Town, Bloemfontein (64,223; European 30,291).
Production 1937 :
Coal (tons of 2,000 lb.) . . . . 1,579,570 tons
Diamonds . . . 97,531 metric carats (£187,597)
Cattle, number 1,831,635
Sheep, woolled, number . . . 8,255,054
Communications and Transport March 31, 1937 :
Roads, 14,257 m.; motor services, 954 route miles.
Railways, Government . . . . 1,633 miles
Motor vehicles licensed (Dec. 31, 1937); cars, 4,311; buses, lorries, and vans, 607; cycles, 102.
Finance :
Revenue (1936–37) . £1,741,929 (Collections £571,917)
Expenditure (1936–37) £1,709,323
Debt outstanding (March 31, 1937) . . £1,337,802
Education June 2, 1936 :
Scholars: primary classes, 36,031; secondary, 7,820.

ORISSA, a small Indian province recently separated from Bihar and enlarged by certain areas transferred from Madras and the Central Provinces. Area about 32,000 sq. miles; population about 8½ millions. It is under a Governor (Sir John Hubback, since April 1936), with a cabinet of three ministers led by Mr. Biswanath Das. The new regime has been hampered by the poverty of the province's finances, and no political event of moment has occurred, though the ministry threatened to resign when, on the Governor's asking for leave, it was proposed to give the post to a permanent official in the province; a crisis was averted by the Governor's forgoing his leave. The capital is Cuttack (pop. 65,263); Puri on the coast (pop. 37,568) is known for the famous temple and procession of Juggernaut. (ME.)



Fox Photos]
THE ANCIENT LAKE NEAR BAMRA, ORISSA

ORTHODOX CHURCHES: *see* EASTERN CHURCHES.

ORTHOPÆDICS AND FRACTURES. During the year 1938 considerable progress has been made in investigations as to the cause and methods of treatment of the following conditions, which have long been recognized as major problems in bone and joint surgery.

Rheumatoid Arthritis. The type of chronic non-specific polyarticular joint infection, usually classified as rheumatoid arthritis, frequently leads to gross joint deformities. As a rule, on the cessation of the so-called active stages of the disease, many joints, especially those of the hands and feet, are found to be painful, swollen, deformed, and seriously restricted in movement.

Treatment of the disease in its active stages has hitherto been largely confined to the discovery and removal of sepsis from such situations as the teeth, sinuses, or bowel. Even in spite of efficient removal of such septic foci the disease has, in many cases, progressed rapidly and has been followed by its usual unfortunate sequelæ.

Jacques Forestier (1928) suggested that by the use of gold salts a cure, or at least a cessation of activity of the disease, could be secured. Since that time many observers have employed the method and have carefully examined and tabulated their findings, which have been so favourable that the method has, during the last year, been accepted as a great advance on all previous forms of treatment. The administration of gold salts is not without risk to the patient, and can only be given to those patients in whom the renal function is adequate, the presence of any considerable quantity of albumen in the urine being a distinct contra-indication to its administration. Combined with the injections, the movements of the inflamed and thickened joints are maintained by encouraged exercises, thus preventing the stiffening which usually follows on prolonged fixation or rest.

Lumbo-sacral Pain. Pain in the lower lumbar spine, or in the regions of the lumbo-sacral, or sacro-iliac joints, may result from one or more of a very large group of pathological and mechanical causes. Pain in such cases may be localized

to the particular area involved, or may be associated with shooting pains, extending down one or both lower limbs along the course of the sciatic nerve.

Mixter and Barr (1934) demonstrated that in a small percentage this syndrome of persistent lumbo-sacral pain, with co-existing sciatica, may be caused by the retropulsion of a portion of one of the intervertebral discs. Over this rounded mass, which is usually about the size of a split pea, any of the constituent branches of the sciatic nerve may be irritated by stretching or deviation from their normal course.

When the signs and symptoms elicited point strongly to the possibility of the presence of such a lesion, confirmation is gained by the injection into the intrathecal space of an opaque material, such as lipiodol. When collected towards the lower end of the spinal canal the continuous dark shadow cast in the X-ray photograph by the injected material is interrupted, the gap corresponding to the site and size of the tumour. When its presence has been confirmed, the protrusion can be removed by operation, a procedure which is usually followed by a complete cessation of the previously existing pain.

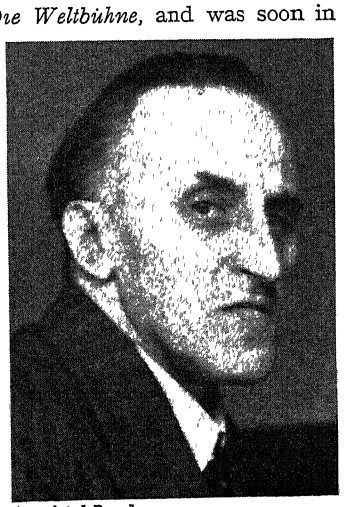
Fractures. When the articular surface of a bone is fractured, particularly so in the case of an adult, even perfect apposition is usually followed by impaired movement and later by arthritic changes.

Brooke (1937) demonstrated that, after a fracture of the patella, in which the articular surface is always involved, the period of disability can be considerably shortened, and the possibility of subsequent arthritis eliminated by removal of the fragments, rather than by their suture, especially when the fracture is comminuted. The fragments are shelled out of their covering of tendinous sheath, and the gap left is closed by suture of the synovial membrane and tendinous aponeurosis in separate layers.

The result of the procedure is excellent, the power of extension being restored almost to normal; active use of the limb is rapidly resumed, the only difficulty being a slight loss of power of active hyperextension of the knee when the joint is braced back in standing.

BIBLIOGRAPHY. Jacques Forestier, *Bulletin of Memoirs* of the Société Médicale des Hôpitaux de Paris (vol liii, p. 323, 1929); Mixter and Barr, *The New England Journal of Medicine* (vol. ccxi, p. 210, 1934); and R. Brooke, *British Journal of Surgery* (vol. xxiv, p. 733, 1936–37). (T. P. McM.)

OSSIETZKY, CARL VON, German pacifist, was born on Oct. 3, 1889, and died in Berlin on May 4, 1938. In 1928 he took control of *Die Weltbühne,* and was soon in trouble owing to the violently pacifist tone of certain articles published in that paper. In 1931 he was sentenced to eighteen months' imprisonment for treason, and in the same year faced a charge of insulting the Reichswehr, of which he was ultimately acquitted. Released from prison late in 1932, he was sent to a concentration camp after the advent of the Nazi regime, and later entered a sanatorium, suffering from tuberculosis. The award to him of the Nobel Peace Prize for 1935 led to a sharp but ineffective protest from the German to the Norwegian government. It is not known how much of the prize money Ossietzky received, but early in 1938 his lawyer was convicted of having embezzled 83,500 marks of it.



Associated Press]
CARL VON OSSIETZKY

OSTEOPATHY in 1938 progressed in Great Britain by an appeal for funds for regularizing and teaching osteopathy in that country, by the functioning of a voluntary register, the General Council and Register of Osteopaths, and by continued research work at Edinburgh University carried out under the direction of the past president of the British Osteopathic Association, Dr. Kelman Macdonald.

Unlike America, where osteopathy originated, Great Britain has not seen fit legally to grant osteopaths the right to practise their profession as they would wish, and, to follow out the advice of a select committee in the House of Lords in 1935, they have endeavoured to raise enough money to maintain a College, Hospital, and Research Institute. International uncertainty has made it impossible to raise more than part of the funds, but a good start has been made. The select committee pointed out the necessity for all osteopaths to unite; the Register was formed for this purpose and is in effect.

In the United States during 1938 progress was made chiefly in education. All osteopathic colleges (some had not done so before) required college work before matriculation. Two colleges require only one year of pre-professional work, but in 1940 will demand two years. Extensive new building was done by several colleges. Both education and research have been retarded by the lack of organization and funds arising out of endowments and foundations, and particular efforts are being made to set up an osteopathic trust to receive and administer such funds.

The work of standardizing training and requirements to be met by osteopaths who specialize went forward under the Advisory Board for Osteopathic Specialists, chiefly in radiology and neuro-psychiatry. Fellowships will be granted on similar terms to those granted by the College of Osteopathic Surgeons and the International Society of Osteopathic Ophthalmology and Otolaryngology.

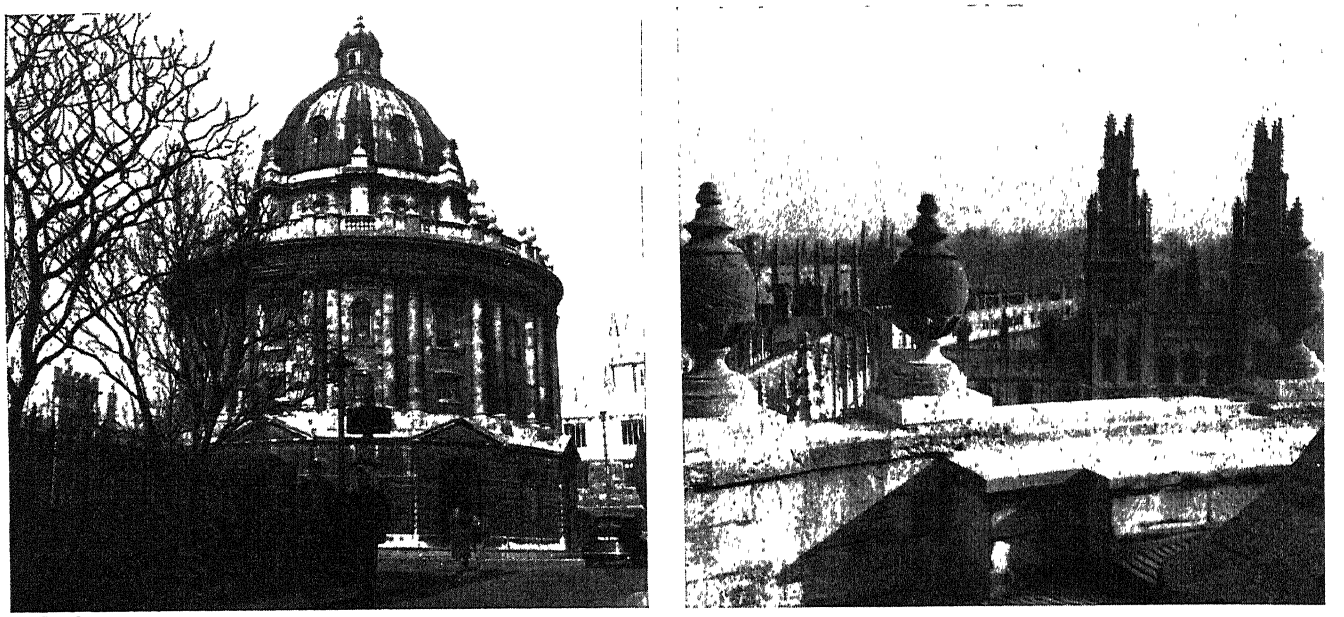
The British Osteopathic Association met for the first time in the provinces in 1938, and held its Convention at Liverpool. As well as the usual professional programme, business meeting, and banquet, a well organized and successful charity ball was held. The American Osteopathic Association met in Cincinnati. (F. D.)

OTTAWA, the capital of the Dominion of Canada, has a population of 126,872, that of the metropolitan district being 175,988.

The growing feeling that Ottawa and its environment should be under Federal jurisdiction is supported by the fact that a very considerable part of the real property in the city is owned by the National Government, which has spent large sums in beautifying the city by establishing and maintaining parks and driveways. Ottawa is an important manufacturing centre of wood and its products. The gross value of manufactured products in 1938 was $23,398,659. The gross postal revenue in 1938 was $731,202. Its most important educational institution is the Université d'Ottawa.

See *The Canada Year Book; Handbook of the City of Ottawa.* (J. C. HE.)

OXFORD UNIVERSITY. The year 1937–38 opened with a gift of £1 million in cash and a site costing over £100,000 from Lord Nuffield. One hundred thousand pounds was for a Laboratory of Physical Chemistry, and £900,000 and the



A. Costa]

THE RADCLIFFE CAMERA (LEFT), BY JAMES GIBBS; WITH (RIGHT) A VIEW FROM ITS BALUSTRADE SHOWING ALL SOULS

site for a new post-graduate College devoted especially though not exclusively to social studies. Mr. Harold Butler (*q.v.*) was appointed its Warden as from Jan. 1, 1939, and Mr. Austen Harrison its architect. It was thought right that the future Warden should help to frame the policy of the College.

Lord Nuffield also created a trust fund of upwards of £160,000 to enable research workers from Australia, New Zealand, and S. Africa to work, six at a time, in the Oxford Medical School, and visiting professors to be appointed from time to time to tour in those Dominions.

A public appeal for the endowment of higher studies was closed on July 31. it yielded about £465,000.

The building of a new Physics Laboratory was begun, at a cost of about £70,000. The final extension of the Taylor Institution, the centre of modern language studies, was completed, and further extensions of the Ashmolean Museum of Classical Art and Archæology and of Fine Art, forming steps in a progressive plan of development, were taken in hand.

Work continued on the extension of the Bodleian Library. This is a building 172 ft. long and 178 ft. wide, consisting of a stack rising to 75 ft. in height surrounded by an outer block 45 ft. high. The steel framework was completed at the end of July, and the building will be finished by the end of 1939.

The number of matriculations in the academic year 1937–38 was 1,616, which is sixty more than in 1936–37. The number of research students increased by 49 to 447. 1,162 persons took the B.A. degree, 620 the M.A., and the total number of persons taking all other degrees was 250. A new statute now makes it possible to take any degree in absence on payment of an additional fee of £5.

The total expenditure of the university (exclusive of the colleges) in 1936–37 (the last year for which figures are available) was £477,650, of which £61,360 was met from trust funds, £75,977 from contributions from the colleges, £110,000 from the government grants, and the balance from endowments, fees, specific grants, etc.

In Oct. 1938 the President of Magdalen (Mr. G. S. Gordon) succeeded the Master of Balliol (Mr. A. D. Lindsay) as Vice-Chancellor. Sir Walter Monkton, K.C.V.O., K.C., was appointed Standing Counsel to the University in Feb. 1938.

BIBLIOGRAPHY. *The Oxford University Handbook*; *The Oxford University Gazette* (especially for Oct. 6, 1938, containing the Vice-Chancellor's Review of the year); *Oxford* (the Magazine of the Oxford Society published terminally). (D. V.)

P

PACIFIC ISLANDS, BRITISH. (*See* also FIJI; NEW HEBRIDES; NEW GUINEA; SAMOA, WESTERN) The colony of the Gilbert and Ellice Islands, and the Solomon Islands and Tongan Islands protectorates are grouped as the British Western Pacific Islands under the administration of the Governor and Commander-in-Chief of Fiji as High Commissioner. The present High Commissioner, Sir Harry Charles Luke, K.C.M.G., was appointed in the room of Sir Arthur Richards in July 1938.

In 1937 both the United Kingdom and the United States had laid claim to the sovereignty of two Pacific islands, Canton and Enderbury, in the Phœnix group, which were likely to be of importance in air navigation. In Aug. 1938 the two governments announced that they had agreed to set up a regime for the use in common of the two islands and to accord to each party equal facilities in their employment "for purposes connected with international aviation and communication".

GILBERT AND ELLICE ISLANDS COLONY includes the Gilbert group; the Ellice group; Ocean Island (the seat of administration); Fanning, Washington, and Christmas islands; and the group of the Phœnix islands.

Area and Population:
Area *c.* 200 sq. miles.
Population (est. Dec. 31, 1936) 34,323.
Production (export figures) 1937:
Phosphate of Lime . . . . . 399,076 tons
Copra . . . . . 5,109 tons
Overseas Trade 1936–37:
Imports £119,201; Exports £449,940
Finance, est. 1938–39:
Revenue £80,679; Expenditure £84,612.
Education 1937:
Total number of schools 224; scholars 6,728.

THE BRITISH SOLOMON ISLANDS PROTECTORATE consists of a double row of mountainous islands, the chief of which are Malaita, Ngela, and Savo.
Area and Population:
Area, total, 11,458 sq miles.
Population (census 1931) 94,066 (Europeans 478).
Production (export 1936–37): Copra 25,074 tons.
Overseas Trade 1936–37:
Imports £197,967; Exports £331,438.
Finance, est. 1938–39:
Revenue £69,497; Expenditure £69,319.
Education 1937:
Elementary schools 6; scholars 4,889.

THE TONGAN ISLAND PROTECTORATE consists of three main groups and three outlying islands.
Area and Population:
Area, total, *c.* 250 sq. miles.
Population (census April 1936) 32,790 (Europeans 342).
Production (export figures) 1937:
Copra 12,288 tons; Bananas £4,128.
Overseas Trade 1937:
Imports £137,365; Exports £164,621.
Roads: metalled 59 miles.
Finance, est. 1938–39:
Revenue £64,431; Expenditure £73,804.
Education 1937:
Number of schools 108; scholars 6,128.

PACIFIC ISLANDS, FRENCH. The latest available statistics for these French possessions are given below.

Area and Population:
Area (Society, Taumotu, Tubai, and Marquesas Is.) 1,540 sq. miles.
Population (est. Dec. 31, 1936) 40,000 (Whites 3,700)
Chief Town Papeete (in Tahiti) (cap., 8,460).
Governor. M Chastenet de Gurry.
Production 1936:
Copra (export) . . . . 22,100 metric tons
Natural Phosphates . . . 147,000 ,, ,,
Overseas Trade 1937:
Imports . . . . . 36,703,000 francs
Exports . . . . . 38,974,000 ,,
Roads 1937: Tahiti 48 miles; Raiaeta 19 miles.
Finance 1938:
Revenue, local (est.) . . . 19,530,600 francs
Expenditure, ordinary (est.) . . 15,845,600 ,,
,, extraordinary (est.) . 3,685,000 ,,

PACIFIC ISLANDS, MANDATED. The former German possessions in the Western Pacific, comprise part of New Guinea (*q v.*) with adjacent archipelagos, Western Samoa (*see* SAMOA, WESTERN), the Marshall, Caroline, Palau, and Ladrone, or Marianne Islands, all administered by Japan as mandatory; and the islet of Nauru, the mandate for which is held jointly by the United Kingdom, Australia, and New Zealand.

JAPANESE MANDATE
Area and Population:
Area, total, 811 sq. miles.
Population (est. Oct. 1, 1936) 107,137 (Japanese 56,496; natives 50,524; foreign 117).
Religion (1935). Roman Catholics 18,019; Protestants 22,730; Buddhists 26,150.
Production 1936:
Cane Sugar 49,100 metric tons (export 12,989,125 yen)
Phosphates 70,000 ,, ,, (,, 2,856,425 ,,)
Copra 12,200 ,, ,, (,, 2,041,313 ,,)
Overseas Trade (1936):
Imports: from Japan 12,979,398 yen; other 886,594 yen.
Exports: to Japan 24,956,501 yen; other 151,317 yen.
Finance 1938:
Revenue, ordinary . . . . 8,957,799 yen
Expenditure, ,, ... 4,421,478 ,,
Revenue, extraordinary . . . 446,687 ,,
Expenditure, ,, . . . 4,983,008 ,,
Education 1937:
Elementary, scholars, Japanese 5,706; native 2,334
Continuation, ,, ,, 3,050 ,, 720

NAURU
Area and Population:
Area 8 sq. miles.
Population (census April 1, 1937) 3,097 (Europeans 194; Nauruan 1,638; Chinese 1,261).
Administrator. Commander R. C. Garsia, R.A.N.
Production (1936):
Natural phosphates . . . 556,000 metric tons
Overseas Trade (1937):
Imports £144,454
Exports (phosphate £513,989) . . . £688,900
Finance (1937):
Revenue £53,343; Expenditure £29,312.
Education (1937):
Elementary schools, European 1; scholars 30
,, ,, native 10; ,, 487

PACIFISM. The pressure of events during 1938 made pacifists examine their principles closely and, in most cases, confirmed them in their faith. The largest organized body

in Britain, the Peace Pledge Union, had in the autumn over 121,000 men and women members, even after a drastic winnowing of signatories. At the period of the crisis there were 190 resignations, but the Union immediately gained 600 new recruits, including some well-known personalities.

The official "absolute pacifist" policy of the Women's Co-operative Guild, which has 83,000 members, was endorsed at its Congress in Southampton, though all the individual members do not accept it.

There is general recognition in the movement that in the event of war circumstances would be different from those in 1914–18. Under to-day's conditions there would be even more complete national organization for war, while the distinction between civilian and soldier would be slight. Pacifists, therefore, have been suspicious of participation in such measures as A.R.P. and of schemes of national service.

In the event of war, pacifist protest would take differing forms, ranging from ambulance work under military auspices to complete non-co-operation. The crisis gave an impetus to consideration of different types of service to the community which would not be limited by frontiers, and that could at once be put into operation and not wait for a "national emergency". Activities, such as those of the International Voluntary Service for Peace, the movement led by the Swiss pacifist, Dr. Pierre Ceresole, which has carried out various schemes of relief in different parts of the world, seem likely to be strengthened and extended.

The national petition, launched by the National Peace Council in November, with the co-operation of pacifist and non-pacifist organizations, was the culmination of much propaganda throughout the year in support of a world conference directed to the removal of economic and allied causes of war, such as was proposed by M. Van Zeeland in his report in the spring. In this connexion George Lansbury, M.P., on behalf of the Embassies of Reconciliation, followed up his previous interviews with statesmen, including Signor Mussolini and Herr Hitler, by visits to rulers and foreign ministers in South-Eastern Europe.

Distinctive among peace gatherings were the conventions sponsored by the British Parliamentary Pacifist Group. Fourteen of these gatherings were held in important centres in Great Britain, at which a world conference has been advocated, war of every kind denounced, and the termination of military treaties and of all forms of conscription called for.

The growth of the pacifist movement in the Churches was shown by the holding of the first Christian Pacifist Congress in London in September. This gathering was arranged by the Council of Christian Pacifist Groups, representing all the chief denominations. Closely allied with this movement is the Fellowship of Reconciliation which, to cope with its increasing work, has divided the country into ten areas, each with a regional secretary. The International F.O.R. movement held a congress in the summer at Lunteren, Holland.

The Roman Catholic pacifists, organized in the Pax movement, sent a special letter to every Roman Catholic pastor at the time of the crisis, in which they set forth the pacifist position. In November the Society of Friends, whose members are closely associated with many pacifist organizations, held a special "Yearly Meeting" on Peace, at which its historic testimony against all war was unhesitatingly re-affirmed.

Incidental illustrations of pacifist action and propaganda included cases of refusal of income-tax—a schoolmaster served 21 days in prison for refusal to pay; the setting up of Dick Sheppard Memorial Clubs; the organization of peace weeks and poster parades; a "drive" for the circulation of the P.P.U. paper *Peace News*, which rose to 20,000 a week; and the inauguration of a scheme for sending letters to people overseas, especially in countries where there is a controlled press, telling them of the growth of the pacifist movement in Britain. This began with the sending of 10,000 letters to Germany.

The War Resisters' International links together 54 organizations and individuals in 68 countries of the world, and it uses fourteen languages in its work. It is in touch with men who are in prison or who are threatened with imprisonment because they refuse to train as soldiers, in Poland, Bulgaria, France, Belgium, Holland, the Philippines, and elsewhere. It has been successful in securing the release of nine such men from the Penal Settlement on Devil's Island, French Guiana. The W.R.I. established a home for Spanish refugee children in the French Pyrenees, and pacifists joined with others in the support of the Basque children brought to England.

In the Dominions, there is a No More War movement and a Christian Pacifist Society in New Zealand. In Australia there are a Peace Pledge Union and several groups engaged in propaganda work through literature, the organization of peace shops, etc. In both countries a close watch has been kept on any extension of military training for schoolboys. Similarly, groups of pacifists were active in South Africa, where they are also interested in inter-racial questions.

In Canada, a Canadian Peace Pledge Union is in contemplation. In the United States the membership of the War Resisters' League stands at about 16,000. Propaganda regarding non-participation in all war has been carried on by this body and by the Fellowship of Reconciliation. The National Peace Conference, a similar body to the National Peace Council in Great Britain, has engaged in a campaign for world economic co-operation.

"Pacifist Youth in Action" is a movement co-ordinating pacifist activities in the colleges, and Student Peace Volunteers settle in rural communities during vacations to carry on peace education.

The American Friends Service Committee, with which pacifist denominations such as the Mennonites co-operate, expresses its peace testimony abroad by relief work in Spain and China, while at home it seeks to minimize civil strife through work camps and community centres in distressed areas. It also arranges Institutes of International Relations for peace workers, clergy, etc., throughout the States. (*See* also FRIENDS, SOCIETY OF.) (H. W. PE.)

PAGET, LADY MURIEL, British welfare worker, died on June 16, 1938. Muriel Evelyn Vernon Finch-Hatton was born on Aug. 19, 1876, the only daughter of Murray Edward Gordon Finch-Hatton, who succeeded as twelfth Earl of Winchilsea in 1887. In 1897 she married Richard Paget, who succeeded as second baronet in 1908. Lady Muriel Paget was for many years well known for her charitable work, which ranged from the provision of invalid kitchens in London for the benefit of maternity cases, to her Red Cross work during and after the War in Russia, the Baltic countries, and Czechoslovakia. She was made a C.B.E. in 1938. When Rakovsky, the former Soviet Ambassador to London, was undergoing his trial for treason in March 1938, he stated that some of his spying had been done at the instigation of Lady Muriel Paget. This fantastic allegation was categorically contradicted by the prime minister in the House of Commons.

PAINTING. Thanks to the spread of centralized and totalitarian governments through Central and Eastern Europe, the field of active individualistic expression in the plastic arts during the last few years has been working steadily westward. And 1938 saw an acceleration rather than a retardation of this trend.

Russia. Art production in the U.S.S.R. during 1938 continued along the line of "social realism". This slogan, introduced with the new art policy of the Soviet in 1934, still stood for the ideal of the ruling party. The social realists insist that the Russian masses are the final arbiters of taste. The artists are expected to make their work conform to the tastes of their new, broader public. Painting and sculpture are expected to be "true to life". Consequently any work of art that is unusual or hard to understand is attacked as "formalistic". The masses in Russia, as elsewhere, are inclined to a timid conservatism. The artists limited by the approval of such a public tend to be timidly conservative and condemn all technical experiments. The result is that to-day, after four years of the social realist policy, Russia is perhaps further out of touch with the *avant-garde* art of Western Europe than it has ever been.

Germany saw a curiously similar condition driving the individualistic artist westward. During 1938 emphasis continued to be thrown on a race-conscious culture. But behind the virulence of the official attacks on "Kultur-Bolshevismus" lay a clearly recognizable "echo of the resentful bewilderment of the man-in-the-street of all countries". Irate condemnations of "degenerate half-wits who on principle see blue fields, a green sky, and sulphurous clouds" have a universally familiar ring. Like the social realists in Russia, Hitler, the typical man-in-the-street, regards the masses as the final arbiter of taste. "Ask these uncorrupted people and you will have an unqualified reply" (Nuremberg Party Congress, 1937). If Hitler does not know exactly what he wants in the field of art, he knows what his "uncorrupted" audience does not like; a pictorial idiom, or any other, that is unfamiliar. The result was that in 1938 Germany still kept its finest national achievements in contemporary expression under lock and key, or ridiculed as specimens of degenerate art. At the same time it glorified the familiar neo-Hellenism of such men as Zeigler and Klein, or sculptures such as those of Klimsch, Breker, and Thorak. The autumn of 1938 saw the death of the expressionist wood-carver, Ernst Barlach, while by the end of the year practically all the leaders of pre-Hitlerian German art were in exile, or without any hope of exhibiting their work in their native land. On the other hand we find those fortunate enough to escape receiving a generous recognition abroad, as in the case of the first prize award given Hofer at the Carnegie International exhibition, Pittsburgh.

Austria and Czechoslovakia, as a result of the extension of the Reich during the spring and autumn, came also to a great extent under Nazi art domination. But the summer in Prague was marked by a great baroque festival which lasted from May until September.

Italy, in contrast to Russia and Germany, has never suffered the limitation of personal expression to which the artists of those two nations have been subjected, possibly owing to the close link between the original Futurist movement and the beginnings of Fascism. By 1938, Futurism had split into two currents: one reflected abstract or surrealist interests; and the other the "futurist aeropainters", a group founded by Marinetti with Prampolini and others. In contradistinction to the abstract-surrealist branch, this group, the "aeropainters", are much more interested in their subject-matter and representational themes. In 1938 the work of the younger members of this group, including Andreoni, Favalli, Lepore, Rossi, Scaini, Belli, Asinari, Forlin, Ricas, and Munari, was widely represented in an exhibition in Milan. Giorgio di Chirico, acknowledged precursor of surrealism, also exhibited there. But while Chirico's work betrayed a desire to return to the spirit of his earlier expressions, it did not yet evince a complete recovery of the power he seemed to lose in turning after 1918 from his early imaginative work to humanism.

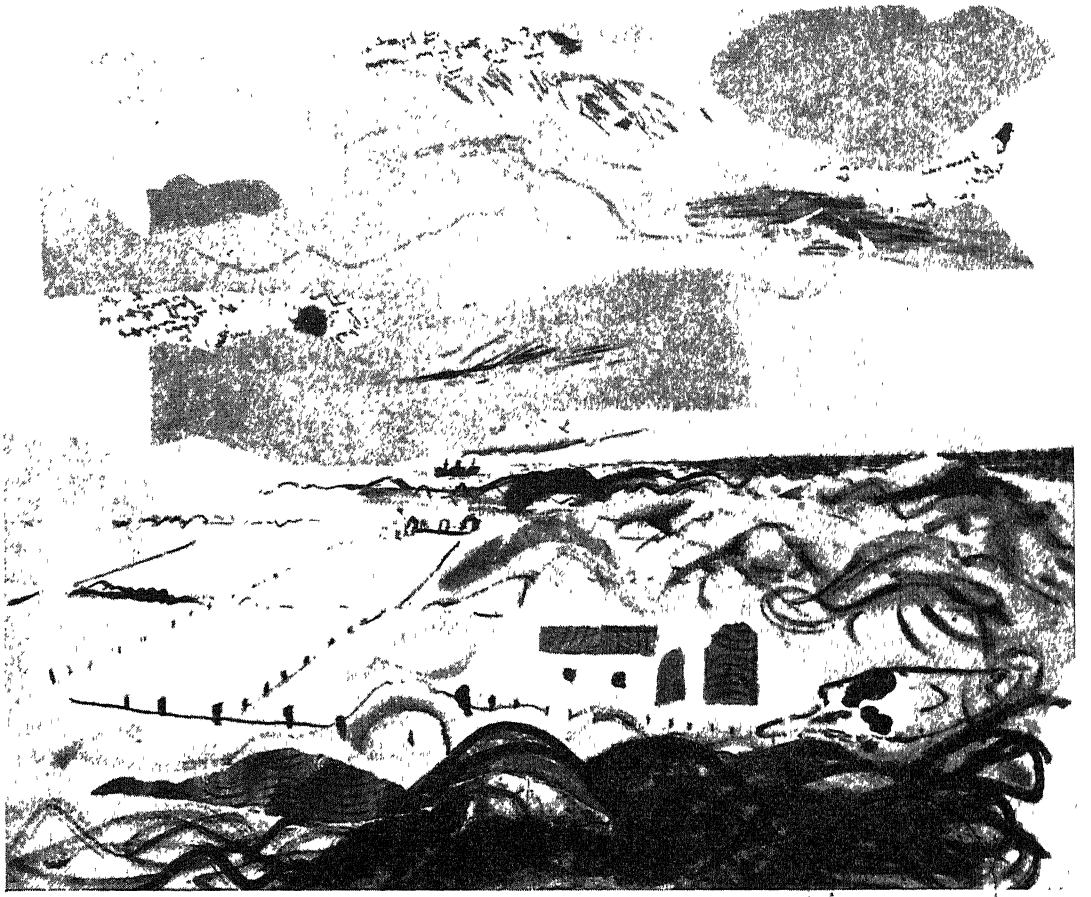
Switzerland. The leading Swiss abstractionists, Erni, Täuber-Arp, and Seligmann, were generously shown in one-man exhibitions and group shows both at home and abroad during the year; while the large annual one-man exhibition of the Zürich Kunsthaus was given to the paintings of the internationally famous architect Le Corbusier and embraced 170 of his canvases.

Holland, in spite of two important exhibitions of abstract and surrealist art, remains largely inhospitable towards the efforts of the ablest of its *avant-garde*. Consequently such artists as Domela and Vontongerloo still continue to work in Paris; and Piet Mondrian, the founder of neo-plasticism, who had lived in Paris for eighteen years, after the September crisis moved to London and there is continuing the personal development of his refined abstract idiom.

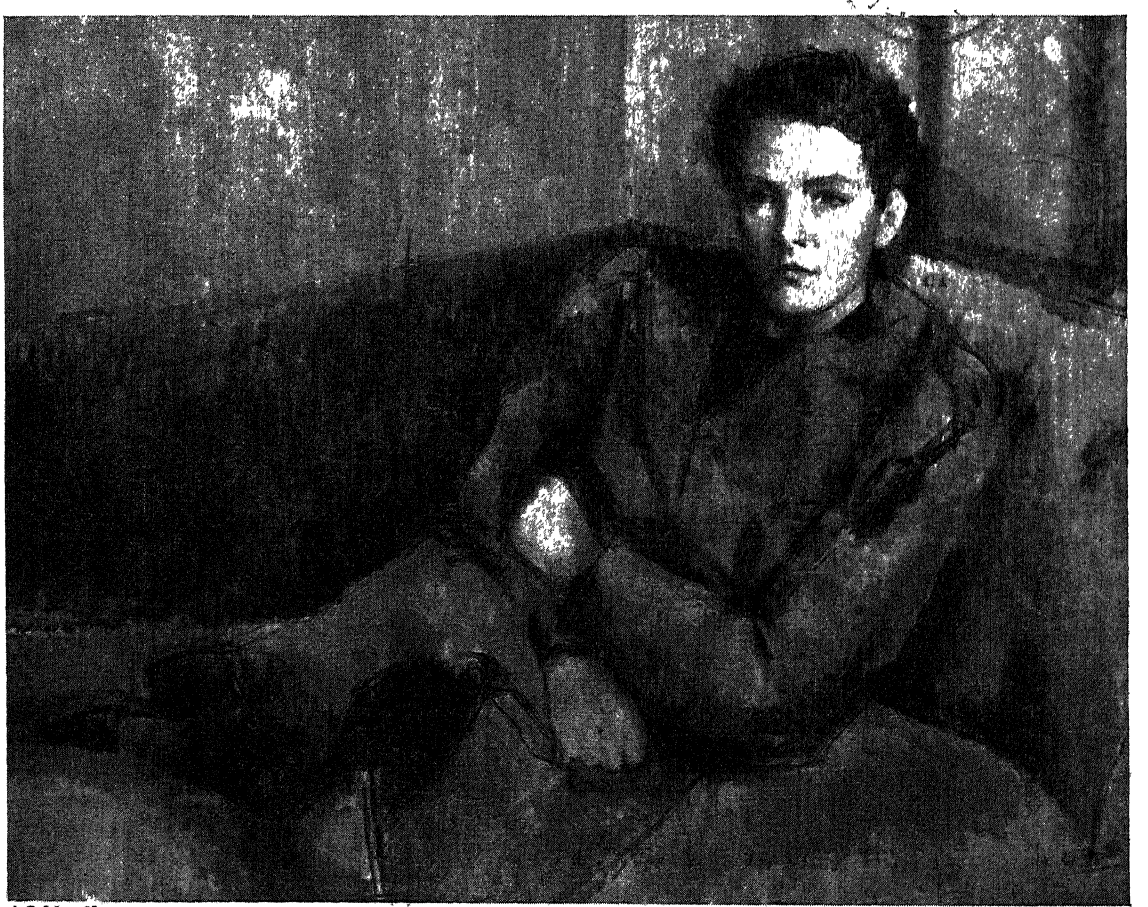
Belgium. Here the surrealist cult keeps a stronger grip on the painter's imagination than the abstract approach. Magritte continued his fantastic space compositions with a growing sensibility. Paul Delvaux achieved his first international recognition in 1938 through exhibitions in Paris and London. Surrealism probably makes its strongest appeal to Belgian taste through its expressionistic character. And expressionism may be said to have been the note which dominated the large exhibition of modern Belgian work at the Academy of Fine Arts in Brussels during the summer—especially through the canvases of Permeke, Tytgat, de Smet, and others.

France opened its 1938 season with a large exhibition of surrealist expression at the Galerie des Beaux-Arts arranged by Breton, Eluard, and Duchamp. Miro, Dali, Ernst, Man Ray, Masson, Arp, Tanguy, Paalen—all the leading Parisian surrealists were represented. Later in the spring Vuillard was made a member of the Académie des Beaux-Arts de l'Institut de France, and a large retrospective exhibition of his work was held during June. Matisse's work, exhibited in the spring, showed a marked recovery of the Fauve master's earlier power; and Léger's recent work displayed a new gaiety of palette and compositional freedom. On the other hand, Braque remains uncertainly decorative, and Picasso showed nothing of the importance of his Guernica panel of the year earlier. Miro, the Catalan surrealist, after a disturbed period during his first few months after settling in Paris, began to find himself again in large colourful compositions and especially in a striking self-portrait. In another field the Russian constructivist, Pevsner, also working in Paris, in 1938 achieved some of the most effective compositions of his career.

Britain, while not boasting the international talent still centred in Paris, possibly offered a greater breadth of activity in 1938. However, the reactionary parties still remained strong, as was seen from the rejection of Wyndham Lewis' portrait of T. S. Eliot by the committee of the Royal Academy spring exhibition. As a protest, Augustus John resigned from the Academy, and a general storm of criticism was aroused. Among the younger men the sur-



"SAND DUNES, SOUTH WALES," BY JOHN PIPER



A. Colebrook]

"INEZ SPENDER," BY WILLIAM COLDSTREAM. TO BE EXHIBITED AT THE WORLD FAIR NEW YORK 1939



Sport & General]

SALVADOR DALI, THE SURREALIST PAINTER, AT WORK

realist enthusiasm of the previous year died down considerably in 1938. The group around the poet Auden, with their social interest in ready legibility, turned to the more directly representational approach of William Coldstream. The abstract movement continued to centre around Ben Nicholson and the Russian constructivist, Gabo. In the spring, the elderly English impressionist, Sickert, held a large exhibition; Nash offered an important group of his personal variations of surrealism; Piper, the most striking of the younger generation, was represented by a large show of oils and collages. In March also a definitive exhibition was held of the work of Christopher Wood, the talented painter who died in 1930 at the age of 29. Among the sculptors, Henry Moore offered the most interesting contributions in his abstractions, while on the other side of the field Dobson, the follower of Maillol, turned from sculpture to flat-surface decoration and produced the most interesting mural of the Glasgow Exhibition for the interior of the Canadian Pavilion. (J. J. Sw.)

United States. Marked by no sensational developments, the general trend of American painting in the year 1938 was toward a far-reaching and aggressive nationalism. The most important factor in this central tendency, if not the mainspring of the whole movement, was the programme of the Federal government which, though considerably curtailed in its relief appropriations, offered subsidies and commissions to painters on a scale unsurpassed in modern times. More significant than the number or the quality of the paintings produced under Federal supervision, was the impetus given to the formation of regional museums, art centres, and local exhibitions, the extension of travelling exhibitions, and the completion of two invaluable projects, the *Index of American Design* and the *History of the Graphic Arts in America*.

Further evidence of nationalism was attested by the prominence accorded to native art by the popular magazines, one illustrated journal alone reproducing in colour one hundred paintings, and by the enormous sales of low-priced colour prints of exceptional excellence. The emphasis on Americanism, however, was not without serious complications, one of which was the successful campaign of the American Artists' Congress to affiliate its thousand members with organized labour unions and to hold simultaneously in thirty cities displays of proletarian art. Another serious consequence was the domination assumed by the unionized Mural Painters' Guild over the wall paintings commmissioned for the World's Fair, a manœuvre operating against the best painters, practically all of whom were opposed to closed shop artistry.

The most impressive group exhibitions of the year included: the retrospective exhibition of American art ranging from Thomas Eakins to Thomas Benton, and sent to Paris and London by the Modern Museum of New York; Art West of the Mississippi, shown by the Whitney Museum of New York; Artists of the Great Lakes Region, shown at Buffalo; and the Carnegie International Exhibition, at Pittsburgh, in which the first price was awarded to a conception by the German, Karl Hofer.

In 1938, the celebrated Bauhaus, an educational experiment in applied modernist design transferred to Chicago from Germany, closed its doors for want of funds and supporting interest. The largest mural commission went to John Steuart Curry, who was authorized by the State of Kansas to decorate the Capitol at Topeka. The outstanding single achievement in painting was the performance of Reginald Marsh in the New York Customs House, a series of powerful murals ranking among the best thus far produced in America. In recognition of his creative imagination, displayed in a new medium of pictorial expression, Walt Disney received honorary degrees from three leading universities. (T. Cr.)

PAINTS, VARNISHES, AND LACQUERS. One of the more interesting uses of paint during 1938 was the application of luminous paints to Air Raid Precautions. In Germany and France, a considerable quantity has been used for this purpose, both for the painting of shelter indicators and other direction signs, and for the covering of air-raid shelter ceilings. Luminosity lasts up to twelve hours. Re-energizing is accomplished by natural or artificial light, so that even in an underground shelter, an interruption of light would still leave some illumination from the luminous paint. This paint is increasingly made in England.

Considerable strides have been made in chlorinated rubber paints. Not only does this type of finish resist acid, alkali, water, oil, and heat, but it is non-inflammable. Moreover, vapours formed during charring of this paint by fire tend to extinguish the neighbouring flames. Great use on aircraft, motor vehicles, and fire-proof shelters is forecast. Based on chlorinated rubber, a coating has been marketed which "digests" rust on metal and changes it into a protective coating which can be painted in the usual way.

Pigment progress has not been spectacular; on the other hand, improvements in raw materials and promising pioneer work has been done. Acicular zinc oxide has attracted attention: certain advantages are claimed. Metal phthalates have been used as pigments.

There were few new solvents produced during the year, although there was a crop of patents relating to the higher and complex alcohols, claimed to be high-boiling solvents after esterification. Di-isobutyl ketone was marketed on a commercial scale, as well as a non-toxic benzol substitute having high solvency. General progress tends towards uniformity of product, chiefly by using continuous processes.

Although there were few really new resins, considerable improvements to existing materials took place, particularly to copals and shellacs. A modified oil-soluble polystyrol resin has been made, claimed, in conjunction with maleic modified resin, to produce excellent films.

Shellac made great strides, particularly in the handling of hard lac resin; successful oil varnishes were prepared. Oil varnishes were also made using the soft lac portion of shellac; these had great flexibility.

The difficulty of delivery of tung oil, due to the war in China, has stimulated research for substitutes. This shortage has led to greater use of hydrated castor oil and oiticica oil. Heat treatment of linseed and similar oils has progressed considerably. Perilla oil has become increasingly available

A good deal of work has been done in Germany on whale oil as a drying oil, as well as Tall Oil. Grape-seed oil has been developed in Italy. Tomato-seed oil also offers possibilities.

Accurate production figures are available only for the U.S.A. During the first eight months of the year, the Bureau of Census reported a 22 per cent fall of paint sales, which were $228,871,804. Selling prices remained steady; 88 manufacturers jointly reported a 7·5 per cent decline in stocks.

See *Jour. Oil and Col. Chem. Assoc.*, 1938, xxi, 118; *Paint, Oil and Chem. Rev.*, 1938, c, No. 8, 16; *Chem. Abs.*, 1938, 1951, 6886; *Paint Manuf.*, 1938, pp. 100, 201; *Chimica e industria*, 1936, iv, 137. (F. B. F.)

PALÆONTOLOGY. Of outstanding importance in research upon invertebrate fossils is Dr. L. F. Spath's review of the Liparoceratidæ, a family of Liassic Ammonites, in which the author reached some important but unexpected results. From the stratigraphical evidence he finds that the involute, sometimes sphærocone, members of the family were ancestral to the more evolute (dimorph) forms, and that from the latter were derived the capricorns, the most evolute forms in the family. He also demonstrated that new characters in the Liparoceratidæ have been acquired independently, so that, here at least, recapitulation in the ontogeny is of no evolutionary significance.

Another important advance in invertebrate palæontology is the description, by Dr. S. Smith and G. A. Kellaway, of the first English Jurassic Stromatoporoids. Of Aalenian and Vesulian age, these are the oldest Jurassic Stromatoporoids known.

In vertebrate palæontology there were several important advances. L. D. Boonstra described an assemblage of fossil reptiles, principally Dicynodonts, from the Luangwa Valley of Northern Rhodesia. The beds are of Lower Beaufort age, and some new genera and species were defined.

Other Karroo fossils from South Africa were dealt with by Baron F. von Huene, who described the skulls of a new genus of Therocephalian (*Scalopocephalus*) and two other genera in detail, surveyed the classification and distribution of the Therocephalia and the Gorgonopsia, and produced a phylogenetic table. The Cynodontia are shown as derivatives of the Gorgonopsian stem, while the mammals are indicated as derived from the Scaloposaurid branch of the Therocephalia.

In America, Karl Schmidt described a new genus of Alligator (*Ceratosuchus*), from the Upper Palæocene of Colorado, in which the skull is remarkable by having the squamosal bones enlarged and compressed to form horn-like knobs.

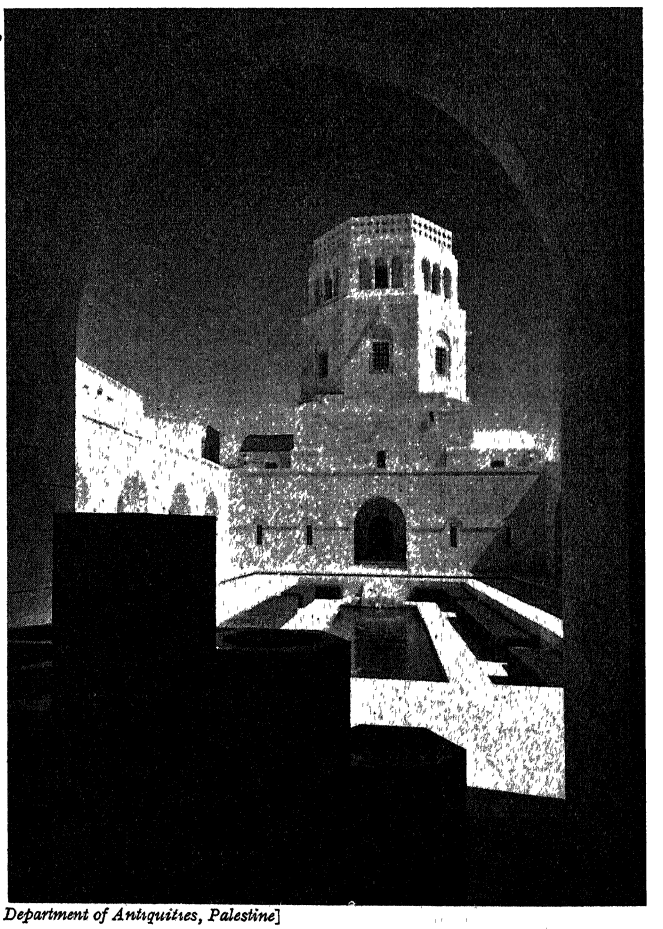
Among fossil mammals interesting researches were also made. Dr. Walter Granger described a giant new Creodont from the Upper Eocene of Inner Mognolia. This new animal (*Sarkastodon*) belongs to the family Oxyænidæ, and had a skull nearly two feet long.

In a monograph of much importance Dr. Edwin Colbert reviewed the fossil mammals from Burma now in the American Museum. A detailed description is given of the collection made in Burma by officers of the American Museum of Natural History during 1923.

During 1938 there was published also the detailed report of the Committee appointed in London to consider the Swanscombe skull. The occipital and left parietal bones of a human skull, discovered in a gravel pit at Swanscombe in Kent in 1935, are determined as those of a young woman, and although they are too incomplete for comparison with the bones of modern skulls, the parts preserved show no appreciable differences. The bones came from the 100-foot Thames Terrace, probably of Mindel-Riss interglacial age, and are the first remains found indubitably associated with implements of Middle Acheulean type. Bones of Middle Pleistocene mammals were also found associated. (W. E. S.)

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PALESTINE. Although the proposals made by the Peel Commission in July 1937 for the partition of Palestine were at once rejected by Arab opinion, they took sufficient account of the Arab demands to be regarded as a partial concession, and so as a justification of the method of violence. Order had never been completely restored since the cessation of the rising in Oct. 1936, and by the end of the following year the disturbances were rapidly growing into a renewal of the rebellion. The tension in Palestine was increased in Jan. 1938 by the publication of the terms of reference of the technical commission, which, under the chairmanship of Sir John Woodhead, was appointed to recommend boundaries for the proposed Arab and Jewish



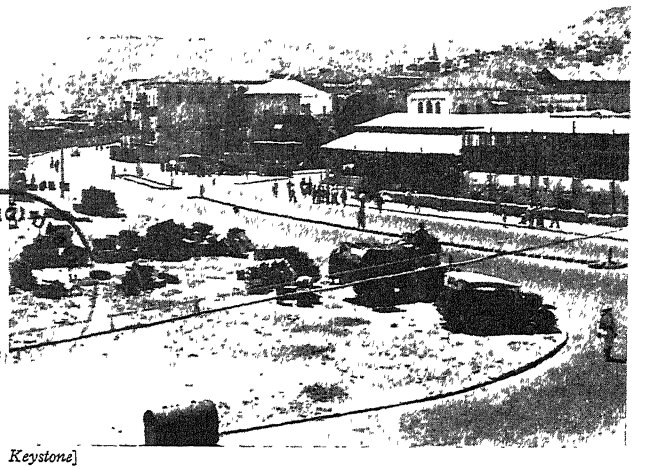
Department of Antiquities, Palestine]

THE PATIO OF THE PALESTINE ARCHÆOLOGICAL MUSEUM AT JERUSALEM, OPENED JAN. 13, 1938



Fox Photos]

THE JERICHO ROAD, DUG UP AND BLOCKED BY STONES BY ARAB TERRORISTS



Keystone]

HAIFA. THE VEGETABLE MARKET (RIGHT) WHERE A BOMB WAS THROWN, KILLING 39 PEOPLE, JULY 1938

areas and the enclaves to be retained under British Mandate. The statement that His Majesty's government would refer a scheme based on the commission's recommendations to the Council of the League of Nations if they thought it equitable and practicable suggested that they were losing confidence in partition as a solution. And the stipulation that the fewest possible Arabs were to be included in the Jewish area seemed to point to a drastic curtailment of the latter. The general effect of the announcement was to emphasize the uncertainty of the country's future and the possible value of further pressure on the government.

During the first six months of 1938 there were continual attacks by armed bands of Arabs, operating for the most part from the hill country of Galilee and Samaria, on Jewish settlements, on individual Arabs accused of disloyalty to the national cause, and on the lines of communication. Sir John Woodhead and his colleagues, who arrived in Palestine on April 27, had to tour the country with an armed escort. Serious as these disorders were, however, they were eclipsed in July by an outbreak on an altogether larger scale. The immediate provocation was provided by what was apparently a series of Jewish reprisals, carried out by members of the small and extreme Revisionist party. Bombs of higher calibre than those normally used by the Arab terrorists were exploded in crowded Arab market-places at Haifa and Jerusalem; one of these explosions alone killed 39 people. Arab reprisals followed, culminating on Oct. 2 in the massacre of nineteen Jews, including ten children, at Tiberias. But although inter-racial feeling was exacerbated by these attacks, the Jews did not again relax their habitual self-restraint, and Arab violence continued to be directed primarily against the Mandatory Power. The armed bands in the hills developed the organization of an army and extended their operations to the small towns, particularly in the Southern District, where they replenished their war-chest by means of raids on banks, post offices, and customs houses. Presumably to enable its followers to enter the towns without arousing comment, the Arab command ordered the townspeople to abandon the tarbush in favour of the traditional headcloth of the *fallahin*, and this order was generally obeyed.

In September Bethlehem was occupied by rebel troops, who destroyed the municipal buildings, police station, law courts, and post office. Ramallah, Beersheba, and Hebron were also invaded, and gradually the civil administration abandoned most of the country outside the Jewish areas and the large towns. Many of the local magistrates' courts were closed, and the collection of taxes was brought to a standstill. Services were suspended for three months on the railway from Lydda to Jerusalem, and all traffic was prohibited on rural roads between sundown and sunrise. The nadir was reached in October, when an infiltration of armed Arabs into the old city of Jerusalem led to fears that even the capital might be lost, or that its recapture might release the forces of religious fanaticism.

Meanwhile, however, the British troops in Palestine were receiving large reinforcements. When the explosion of inter-racial violence occurred in July there were two Divisions in the country. They were immediately joined by two battalions from Egypt. A further brigade was sent from England in September, followed in October by another five battalions, with two cavalry regiments from England and a further three battalions from India. By the end of October General Haining had about 20,000 troops under his command. Early in the same month the High Commissioner, Sir Harold MacMichael, visited London to confer with the Colonial Secretary on the political and military situation and on the 18th the special powers previously vested in the District Commissioners were transferred to military commanders; at the same time the police were placed under military control. The first achievement of the new regime was the recovery of control in the old city of Jerusalem, and the other disputed towns were gradually re-occupied. By December public security was greater than it had been for some months, but the period between July and November had been the most disastrous in the history of the Mandate. It was estimated that the casualties in the four months ending Oct. 31 numbered 2,461. The Arabs lost over 1,000 lives; there were 219 Jewish deaths and 42 British.

Against this background the Woodhead Commission drafted its Report, which was published on Nov. 9. The Commission's terms of reference had emphasized that the proposed Arab and Jewish States should be self-supporting, should possess adequate security, and should be racially as homogeneous as possible. This last condition was held by all the commissioners to preclude the incorporation of Galilee in the Jewish State, and to that extent the scheme tentatively drafted by the Peel Commission was unanimously modified. The commissioners also agreed that no Arab State, however the frontiers might be drawn, could hope to be financially self-supporting in the predictable future. It followed that some form of subsidy would have to be paid from the British Treasury to the Arab government



American Colony, Jerusalem]
TEL-AVIV, PALESTINE. DIZENGOFF CIRCLE, NAMED AFTER A POPULAR MAYOR OF THE CITY

and a State receiving such financial support would not enjoy sovereign independence. They could not, therefore, make any recommendation which would fall within their terms of reference. But three of the four members of the commission felt that the financial difficulty was not in itself an insuperable obstacle to partition, if His Majesty's government were prepared to accept the liability it involved. This majority was divided, however, on the details of partition. The Chairman and Mr. A. P. Waterfield advocated a scheme which would restrict the Jewish State to a narrow strip of territory in the maritime plain, while leaving under British Mandate not only Jerusalem and a corridor to the sea, but also the Negeb and the whole of Galilee, with the plain of Esdraelon and Haifa. Sir Alison Russell preferred a plan which would be more generous to the Jews; but the fourth member, Mr. T. Reid, considered that both were impracticable. That which had the largest backing would certainly have commended itself to neither Arabs nor Jews.

Faced with this divided and unhopeful advice, the British government concluded that "the political, administrative, and financial difficulties involved in the proposal to create independent Arab and Jewish States inside Palestine are so great that this solution of the problem is impracticable". They therefore announced that they would continue to accept responsibility for the government of the whole of Palestine, and that they would shortly reach a decision on their future policy. As, however, the surest foundation for its success would be the concurrence of the two communities, they proposed first to invite representatives of the Jewish Agency, of the Palestinian Arabs, and of the neighbouring Arab States to confer with them in London.

Early in December the Colonial Secretary announced that invitations to send representatives to the London discussions had been accepted by the governments of Egypt, 'Iraq, Saudi Arabia, and Transjordan. The Jewish Agency had also accepted, and a reply was awaited from the Imam of the Yemen. To facilitate the choice of delegates by the Arabs of Palestine, those of their leaders who had been deported to the Seychelles in 1937 would be released; any of the exiled leaders, with one exception, would be allowed to proceed to London if they were nominated. The exception was the Mufti of Jerusalem, and in view of this embargo on their acknowledged leader, it was not easy to see how the majority of the Palestinian Arabs would choose to be represented. Resentment at his exclusion was tempered by satisfaction at the British government's recognition of the interest of the independent Arab States in the future of Palestine.

This interest had again been demonstrated in October at the meetings of an Arab Inter-Parliamentary Congress for the Defence of Palestine, held in Cairo. On the other hand, the problem of Palestine was complicated, as in previous years, by developments in Europe. The annexation of Austria and the Sudeten districts of Czechoslovakia by Germany, followed by the further intensification of anti-Semitism in that country, produced a widespread demand for the lifting of restrictions on immigration into Palestine. (H. By.)

Area and Population:
Area 10,100 sq. miles.
Population (est. June 30, 1937) 1,383,320.
Chief Towns: Jerusalem, capital (120,000); Haifa (100,000); Jaffa (70,000); Tel-Aviv (150,000).

High Commissioner. Sir H. A. MacMichael, K.C.M.G.

Languages. English, Arabic, Hebrew.

Religions. Mohammedan 875,947; Jewish 386,084; Christian 109,760.

Production 1937:

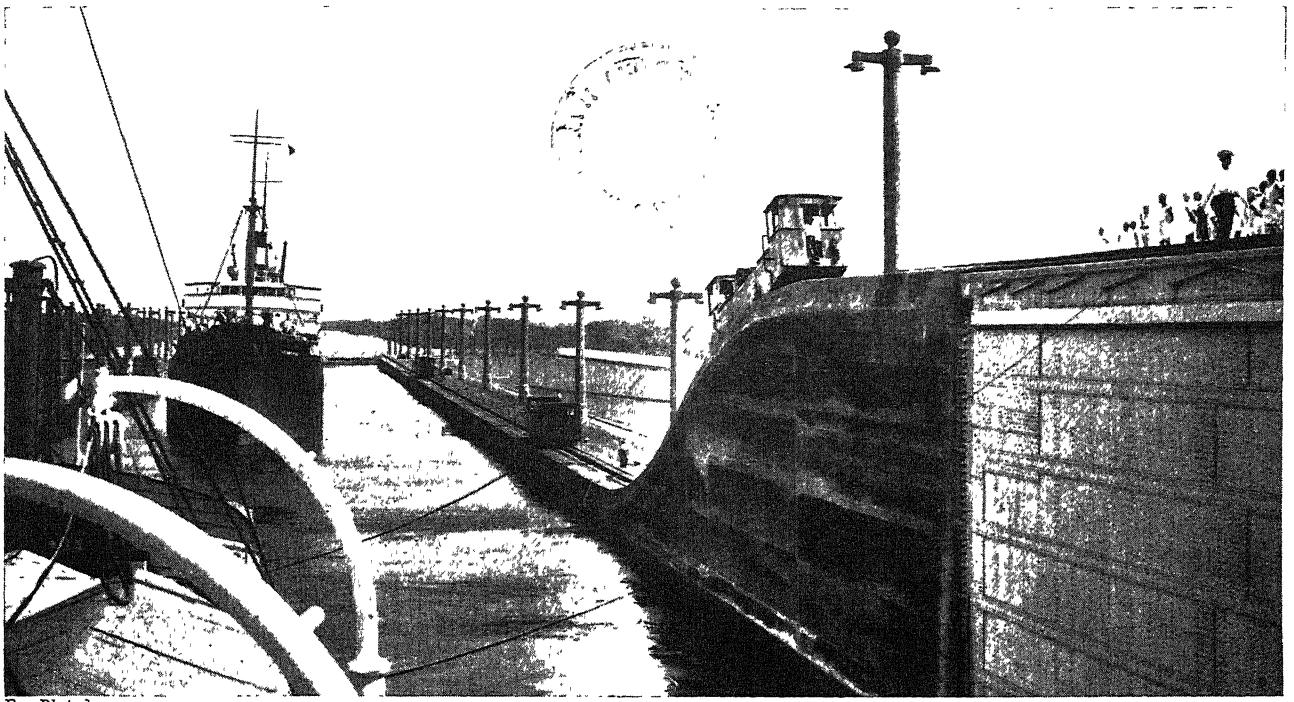
Wheat	127,400	metric tons
Barley	75,400	,, ,,
Sesamum	9,300	,, ,,
Olive Oil	9,600	,, ,,
Potash	15,000	,, ,,
Oranges (export 1936–37)	9,116,903	boxes £P. 3,374,905

Overseas Trade, merchandise 1937:

Imports	£P. 15,903,666
Exports, domestic	£P. 5,819,779
Re-exports	£P. 636,093

Communications:
Roads, 760 miles all weather; 1,140 miles dry weather.
Railways, standard gauge 332 miles; narrow 71 miles.

Finance and Banking:
Revenue (1937–38) . . . . £P. 4,909,000



Fox Photos]

ELECTRIC TROLLEYS BRINGING SHIPS THROUGH THE GATUN LOCKS ON THE PANAMA CANAL

Expenditure (1937–38)	£P. 7,326,000
Public Debt (Mar. 31, 1937)	£P. 4,475,000
Notes in circulation (Nov. 30, 1938)	£P. 5,000,000
Exchange Rate	£ Palestine 1 = £1 stg.

Education 1936–37 :

Elementary, Arab schools 738 : scholars		78,147
	Jewish schools 581 ; ,,	62,273
Secondary, Mohammedan schools 15 ; scholars		744
	Christian schools 32 ; ,,	1,486
	Jewish schools 25 ; ,,	4,177

Miscellaneous :

Motor vehicles licensed (Dec. 31, 1936) 3,742 private cars ; 1,082 public cars ; 887 buses ; 2,335 lorries, etc. ; 1,027 cycles.

Wireless receiving-set licences (1937) 28,516.

PANAMÁ, a republic at the juncture of Central and South America ; language, Spanish ; capital, Panamá ; president, Dr. Juan D. Arosemena. Area 34,169 sq. miles, including the Canal Zone (under United States jurisdiction). Population (1930 census) 467,459 ; (1937 official est.) 547,536. Chief cities (1930 populations) : Panamá, 82,827 ; Colon, 33,460.

Panamá was economically prosperous during 1938, but long-standing boundary difficulties with Costa Rica threatened throughout the year. A four-year dispute with the United States over canal annuities was tentatively settled by treaty, but upon failure of the United States Senate to ratify, Panamá threatened to suspend interest payments on her bonds, and on Oct. 25 authorized a $6,000,000 internal loan to which foreign-owned banks were required to subscribe.

Panamá has 257 miles of railroad and over 497 miles of good highway, with more under construction. Her strategic position in relation to all parts of the Western Hemisphere makes her the hub of inter-American aviation. Imports, principally textiles and foodstuffs, totalled $21,828,175 in 1937, and $10,421,045 in the first seven months of 1938, over fifty per cent from the United States, with Japan second. Exports, with bananas leading, were $4,069,727, and re-exports $4,549,468 in 1937. Tourist and canal trade normally serve to offset the " unfavourable trade balance ". The monetary unit is the balboa, equivalent to the U.S. dollar. For the school year 1938–39 there were 629 primary schools (544 rural), with 61,706 enrolment ; seven secondary schools with 3,830 ; and the national university with 411. Panamá has no army or navy, but maintains a national police force of 1,200 (L. W. Be.)

PANAMA CANAL AND CANAL ZONE. Area 553·8 sq. miles ; of which 170·2 are water ; population, June 1938, exclusive of Army and Navy personnel, 29,063, of whom 8,693 were United States citizens. The length of the canal from shore line to shore line is 40·27 miles. Both canal and zone are under the jurisdiction of the United States.

The Panama canal connects the Atlantic and Pacific oceans through the narrow isthmus of Panama, at approximately 9° N. lat. and 79° W. long. Revenues for the fiscal year 1938, principally from tolls, totalled $24,130,140, and the net appropriation expenses were $9,395,624, which left a net revenue of $14,734,516, or a return of 2·90 per cent to the United States government on its investment in the canal enterprises.

During the fiscal year ended June 30, 1938, there were 5,524 transits of ocean-going commercial vessels in comparison with 5,387 in the preceding year and 5,382 in the fiscal year 1936. Of the 5,524, 1,780 were of United States registry, 1,281 British, 667 Norwegian, 357 German, 300 Japanese, 285 Netherlands, 223 Danish, 182 Panamanian, 119 Swedish, 105 French, and the remaining 225 of sixteen other nationalities.

Tolls are levied on the net tonnages of ships. Prior to March 1, 1938, the rate for laden ships was $1·20 per net ton Panama canal measurement, and for ballast ships $0·72 per net ton. Commencing on that date tolls were assessed at $0·90 per net ton for laden vessels and $0·72 per net ton for ballast vessels based on new rules of measurement of the Panama canal. During the fiscal year ended June 30, 1938, tolls collections averaged $4,194 per vessel of over 300 net tons Panama canal measurement.

Traffic through the Canal for the last ten Fiscal Years

Fiscal year ending June 30	Southbound (Atlantic to Pacific)		Northbound (Pacific to Atlantic)		Total		Tolls levied
	Vessels*	Cargo, tons	Vessels*	Cargo, tons	Vessels*	Cargo, tons	
							$
1929	3,279	9,873,529	3,010	20,774,239	6,289	30,647,768	27,111,125
1930	3,051	9,472,061	2,976	20,546,368	6,027	30,018,429	27,059,999
1931	2,717	6,670,718	2,653	18,394,565	5,370	25,065,283	24,624,600
1932	2,273	5,631,717	2,089	14,167,269	4,362	19,798,986	20,694,705
1933	2,184	4,507,070	1,978	13,654,095	4,162	18,161,165	19,601 077
1934	2,753	6,162,649	2,481	18,541,360	5,234	24,704,009	24,047,183
1935	2,676	7,529,721	2,504	17,779,806	5,180	25,309,527	23,307,063
1936	2,770	8,249,899	2,612	18,256,044	5,382	26,505,943	23,479,114
1937	2,865	9,895,632	2,522	18,212,743	5,387	28,108,375	23,102,137
1938	2,946	9,688,560	2,578	17,697,364	5,524	27,385,924	23,169,889

* Ocean-going commercial vessels, over 300 net tons Panama canal measurement, excluding canal vessels, U.S. Army and Navy, Panamanian Government, Colombian Army and Navy vessels

PAN-AMERICAN CONFERENCE. The Eighth International Conference of the American States, the regular quinquennial meeting of representatives of the 21 American republics, was held at Lima (Peru), Dec. 8 to 27, 1938. The conference had been preceded, in 1936, by a special "Inter-American Conference for the Maintenance of Peace" at Buenos Aires, which served to set the stage. The momentous events of 1938 in Europe and their implied threat to the Americas caused the Lima conference to loom larger and more important in the eyes of the peoples of the Americas than had any preceding meeting.

Preparations for the meeting were well under way at the beginning of 1938, and throughout the year various American States made proposals for action to be taken with the idea of presenting a united front. The Dominican Republic, in particular, formally advocated creation of an American League of Nations. Mexico (*q.v.*), sorely beset during the year by foreign pressure on account of her oil expropriation policy, prepared to ask formal endorsement of the Calvo Doctrine, which proscribed forcible collection of claims of citizens of one state against the government of another.

Although, until a short time before the conference met, it appeared that Ecuador (*q.v.*) would not be represented, owing to her bitter boundary dispute with Peru, all 21 of the republics sent delegates. In contrast to practice in the past, the delegations generally included the most outstanding diplomats of their respective countries. Ten were headed by incumbent foreign ministers (including the United States secretary of State, Mr. Cordell Hull). From its opening the Conference was marked by absence of the mutual suspicions which had characterized many of its predecessors. Particularly was this true of the attitude towards the United States, until 1933 the general object of mistrust on the part of most of the Latin American republics. Instead, Mr. Cordell Hull was the leading individual at the Conference, and was generally accorded most credit for the friendly tone maintained throughout. Argentine opposition to the strong phrasing of proposals urged by the United States prevented as thorough-going an affirmation of inter-American solidarity as had been anticipated by some; nevertheless the democratic approach followed and the spirit of compromise manifested were the outstanding features of the Conference.

The Conference rejected, for the time at least, proposals for an American League of Nations, an inter-American court of justice, and an inter-American institute of economics and finance, as well as formal military alliance; nevertheless, it set forth a positive policy in the "Declaration of Lima" and approved a total of 111 resolutions on various subjects. In the Declaration, following the general action of the Buenos Aires conference of 1936, the 21 republics reaffirmed "continental solidarity" and their purpose to "collaborate in maintaining the principles upon which it is based", and their "decision to maintain and defend" those principles "against all foreign intervention and activity that may threaten them", and they established procedure for consultation in the event of need. A further declaration provided for consultation "on any question, economic, cultural, or of other order, which by its importance justifies this procedure". The Conference also went on record against restrictive trade barriers and practices within the Americas. Bogotá (Colombia) was designated as the meeting place for the Ninth Pan-American Conference, to be held in 1943. (L. W. Be.)

PAN-AMERICAN UNION, an international body created by the 21 American republics for the fostering of mutual understanding and co-operation. Headquarters, Washington; director, Dr. Leo S. Rowe. In 1938 the Union was active in aiding special conferences, notably the Tenth Pan-American Sanitary Conference, held at Bogotá in September, and in furthering mediation and arbitration of disputes between member countries, as between Costa Rica and Panamá (*see* Panamá), the Dominican Republic and Haiti (*see* Haiti), and Ecuador and Peru (*see* Ecuador).

The Union has several important subdivisions, devoted to more specialized activities as foreign trade, intellectual co-operation, and agricultural co-operation. The Union collects and publishes cultural, statistical, and other information of Pan-American interest, through several regular periodicals and special pamphlets. (*See* also Pan-American Conference). (L. W. Be.)

PAPER AND PULP INDUSTRY. The paper business in the United Kingdom continued to be good in 1937 and in part of 1938. Although no official statistics have been issued since 1935 by the Board of Trade, the following for 1937 and probably for 1938 (in long tons) are approximately correct in so far as the use of raw materials is concerned.

	Paper	Board
Bleached sulphite	117,000	18,000
Unbleached sulphite	555,000	25,000
Sulphate	212,000	38,000
Mechanical	703,000	47,000
Knotter	3,000	17,000
Esparto	130,000	—
Rags, etc.	50,000	—
Waste paper	10,000	290,000
Loading, etc.	220,000	15,000
	2,000,000	450,000

Price problems were the most important concern during the year. The sale of newsprint was uneconomic, since much of this material was bought for 1937 and 1938 on 1936 prices. In spite of price increases, kraft mills ran to capacity.

In 1937 there were two new board machines started and two more in 1938. At least one new fine paper machine was started in 1937, and in 1938 a new large newsprint machine went into operation. Among other developments that should be noted is the new mill of Celotex Ltd., where insulating board from bagasse is being made.

In the United States the pulp and paper industry in 1938 was featured by the extension of the 1937 recession in business and by price problems. Paper production in Dec. 1937 was about 54 per cent of capacity, and by Oct. 1938 had risen to 76 per cent. Paper board during the same period rose from 46 per cent to 66 per cent.



Fox Photos]
SWEDISH TIMBER HANDLERS GUIDING LOGS ON THEIR WAY TO THE PULP FACTORY

Of particular interest during the past few years has been the expansion of the kraft pulp and paper industry in the South, where several great kraft mills have been completed.

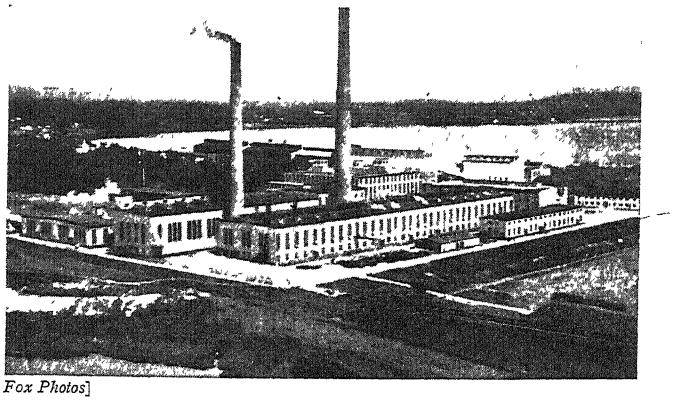
United States Paper Production

In Short Tons (U.S. census)

	1936	1937
Newsprint	938,287	962,700
Book papers	1,438,046	1,525,000
Coated book	301,883	—
Paper board	5,454,637	5,700,000
Wrapping	1,879,323	1,966,000
Writing	603,853	616,000
Cover	24,000	26,800
Tissue	494,721	525,000
Absorbent	105,000	—
Building	549,701	600,000
All other	238,117	678,500
Total—all grades	11,975,552	12,600,000

In the paper board industry progress is being made in the manufacture of containers of all kinds, largely at the expense of the timber and cotton goods industries. In paper manufacture advances are being made by the machine coating processes, wherein a product is being made that is replacing paper coated by the slower coating methods. In pulping there is a continued trend towards the use of forced circulation, and in the kraft process vacuum washers have replaced diffusers in a number of mills. The production of tallol and fatty acids, as kraft mill by-products, has become an important factor.

The following figures covering world consumption of wood pulp and paper in an air dry ton of 2,000 lb., in 1936, are of interest: sulphite, 9,000,000 (bleached, paper-grade, 3,350,000; bleached, rayon-grade, 750,000; unbleached, 4,900,000); sulphate, 4,200,000 (bleached, 550,000; unbleached, 3,650,000); soda and semi-chemical, 600,000; groundwood, 9,200,000; total, 23,000,000; newsprint paper, 8,232,000; paper board, 9,184,000; all other paper, 12,152,000; total paper, 29,568,000.



Fox Photos]
THE OSTRAND SULPHATE PULP MILL, SWEDEN

Business conditions in Canada reflected world conditions, and in particular those of the United States, where so much newsprint is sold. Business started in 1937 under boom conditions and fell off precipitously at mid-year. Although prices were increased, these were offset considerably by the rising costs of raw materials, etc. Board mills had an excellent year, particularly containers for the retail trade.

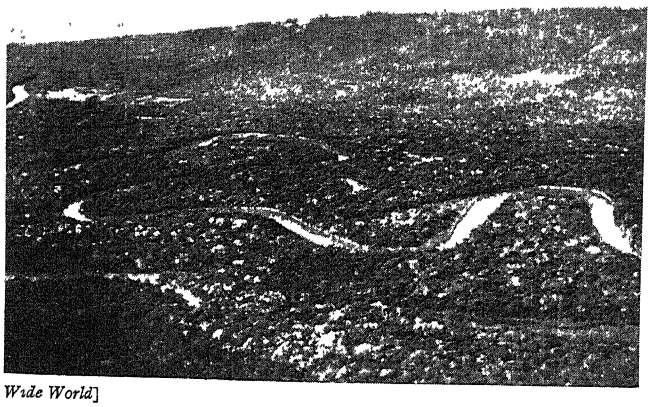
One large newsprint mill was built at Baie Comeau for the Quebec North Shore Pulp and Paper Company, a subsidiary of the Ontario Paper Company of Thorold. Construction was started on the mill of the Lake Sulphite Pulp Company at Red Rock on Nipigon Bay, Ontario. About 650,000 tons of newsprint was produced in 1937.

An interesting technical development was the starting of a plant at the Cornwall, Ont., mill of the Howard Smith Paper Company for the production of vanilla from sulphite waste liquor. At an earlier date the manufacture of yeast from this liquor was started at the Liverpool, N.S., mill of the Mersey Paper Company. These projects demonstrate the possibilities of producing chemical by-products from pulp-mill wastes.

PAPUA: *see* NEW GUINEA.

PARAGUAY, an inland republic in Southern South America; language, Spanish; president, Felix Paiva. Area, as adjusted by the Chaco Arbitral Award of 1938, unofficially computed at 154,165 sq. miles. Population (1937 official est.) 936,126. Chief cities: Asunción, the capital, 104,820 (1937 census); Villa Rica, 30,000 (est.); Concepción, 25,000 (est.).

In Feb. 1938, General José Félix Estigarribia, Paraguayan hero of the Chaco War, returned after two years' voluntary exile in Montevideo, and was greeted in Asunción with wild enthusiasm. Shortly afterwards he was appointed Minister to the United States. After a period of intense anxiety, a settlement of the boundary dispute with Bolivia was finally reached on July 21 (*see* CHACO). Election of a congress in September terminated a two-and-a-half year period of revolutionary government. The Congress, meeting in October, formally extended President Paiva's term of office until the election of a new chief executive in 1939. Through October and November, however, Paiva faced numerous political difficulties, with frequent changes in cabinet personnel. Nevertheless, a definite advance toward political stability was made with the termination, on Oct. 20, of a fourteen-month press censorship, and political prospects for the country were definitely brighter at the close of the year.



Wide World]
THE UPPER PARAGUAY RIVER, AS IT FLOWS FROM THE MATTO GROSSO, BRAZIL, TOWARDS PARAGUAY

Education. In 1937, Paraguay had 997 public schools, an increase of 174 over 1936, and 292 over 1930, with 133,287 enrolment; 129 private schools (enrolment 6,179), eight normal schools, and one university.

Finance. Monetary units are the paper peso and the gold peso, both based on Argentine currency (values: approximately $\frac{3}{8}d.$ and 2*s.* $9\frac{1}{2}d.$). The public debt in 1937 was 11,357,229 gold and 122,150,824 paper pesos, increases of 10 per cent and 250 per cent respectively over 1936.

Trade and Communications. Paraguay has 715 miles of railroads. In 1938 tentative plans were being made for a direct rail connexion to the Atlantic through Brazil. Imports (chiefly foodstuffs, textiles, and machinery) in 1937 totalled 12,401,240 and exports 12,066,368 gold pesos. Exports are animal products (23·1 per cent in 1937), agricultural products (48·5 per cent), of which cotton comprises nearly three-fourths, and forest products (25 per cent), primarily quebracho extract. Cotton, maté (Paraguay tea), quebracho, and cattle are the principal products. (L. W BE)

PARENTS' ASSOCIATIONS: *see* EDUCATIONAL ASSOCIATIONS.

PARIS. During 1938 the demolition work on the International Exhibition of 1937 was carried out. One thing, however, remains from the Exhibition—the new Palais du Trocadero, opposite the Eiffel Tower. In this building modern art has derived its inspiration from the past. Two white wings extend their harmonious and impeccable lines on either side of an immense terrace, from which the view offers a fine perspective of the Champ de Mars as far as the École Militaire and out beyond over Paris.

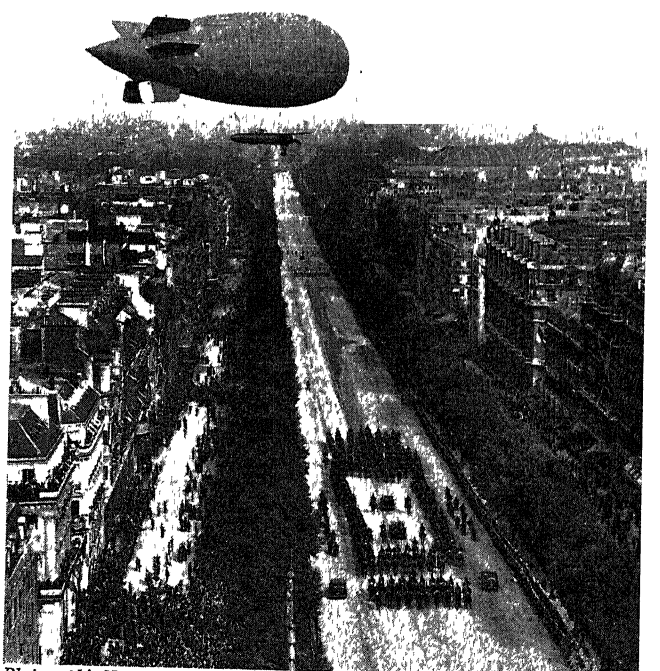
Not far off, the axe of demolition has spared the Museums on the Quai de Tokio. Everywhere along the Seine, from Auteuil to the Place de la Concorde, peace and order reign once more. The tram-lines have been taken away, the streets relaid, and even a new grass border has been put down to bring a note of freshness and gaiety into these pleasant quarters of Paris.

Other districts, less favoured till now, where the houses are badly built and unhealthy, are in process of demolition. The old houses have been destroyed, and are being replaced by buildings surrounded by public gardens. At the various gates of Paris, in particular, where the old fortifications have been destroyed, new cities have grown up, where light and air are available to those Parisians who had hitherto been congested in the narrow streets of the centre of the city. Organizations such as the *Office Public d'Habitation à Bon Marché de la Ville de Paris* have undertaken the construction and development here of blocks of flats, and their social service system has installed baths, dispensaries, sanatoria, and children's clinics, where a medical service is in regular attendance to examine, care for, and generally look after the children. To meet the need for new churches in these new centres of population, the "Chantiers du Cardinal", founded by the Archbishop of Paris, has opened 106 places of worship.

All round the city the outer boulevards, which have become indispensable in order to draw off congestion from the very heavy traffic in the centre, have been considerably widened and improved. New tunnels have been made. The main arteries out of Paris, which were much too narrow, have also been widened, and considerable works have been undertaken, especially towards the west, in the direction of La Défense, Courbevoie, and Saint-Cloud, where the first French *autostrade* is planned. The bridges have also been widened.

The visit in July of the British sovereigns, King George VI and Queen Elizabeth, caused great rejoicings in Paris. During their stay the city was beflagged and illuminated and many entertainments were organized, including the splendid fêtes at Bagatelle, Versailles, and the Opéra. Many opportunities were found to demonstrate the strength of Franco-British friendship. Paris had the opportunity of enjoying the Exhibition of British art, which was also visited by the King and Queen.

In September the European crisis made itself felt also in Paris. The city maintained its habitual calm, but the warning served to show that the existing air-raid defences were insufficient. Constructional works were immediately undertaken, and many air-raid shelters have been planned to house 17,000 and even as many as 25,000 persons.

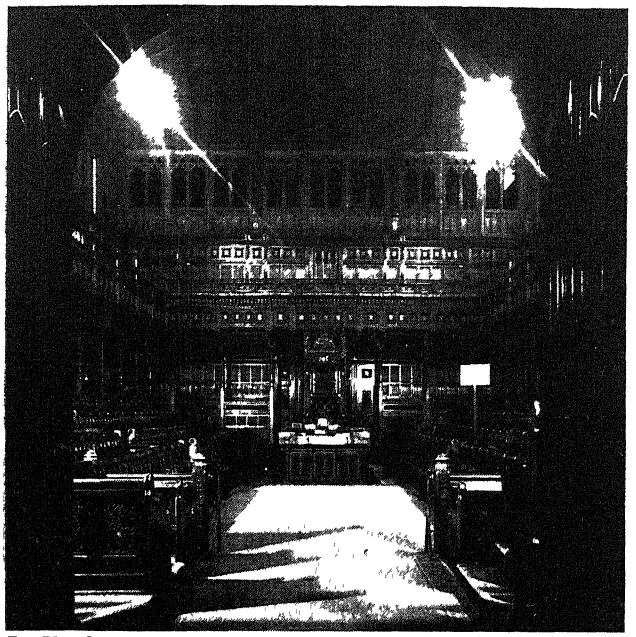


Photographic News Agencies, Ltd.]
THE STATE VISIT OF GEORGE VI. AND QUEEN ELIZABETH TO FRANCE. THE PROCESSION PASSING DOWN THE CHAMPS ÉLYSÉES, PARIS, JULY 19, 1938

In October King Leopold III, King of the Belgians, came to dedicate the statue of his father, King Albert I.

In November King Carol of Rumania spent two days in Paris on his way back from London, together with his son and M Petrescu Comnen, the Rumanian foreign minister

On Nov 23 Paris welcomed the British prime minister, Mr. Neville Chamberlain, and Mrs Chamberlain, together with Lord and Lady Halifax (R PIN)



Fox Photos]

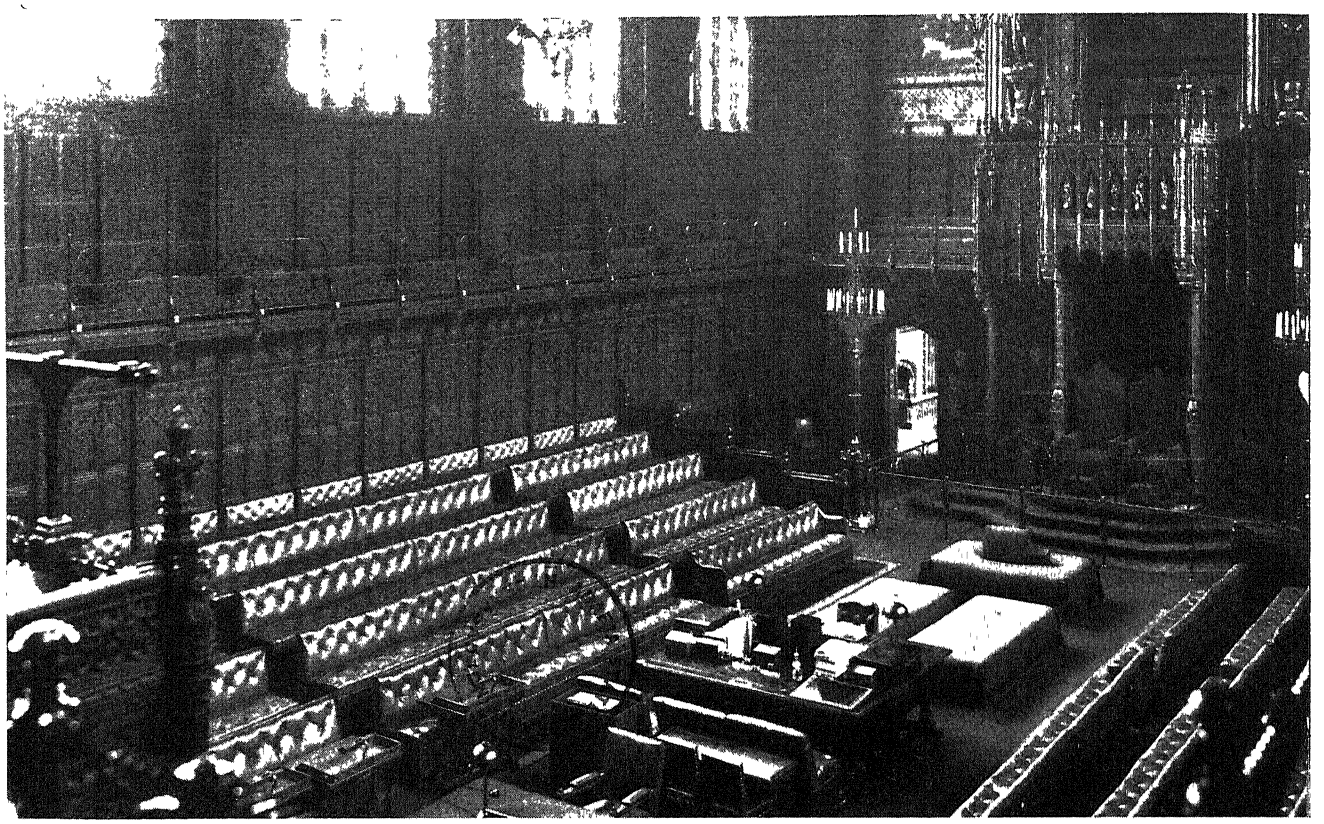
THE HOUSE OF COMMONS, WESTMINSTER, LONDON

PARLIAMENT, HOUSES OF. The British Houses of Parliament were composed as follows on Dec. 31, 1938 :

House of Commons.—

(*C.* = Conservative ; *Com.* = Communist ; *I.L.P.* = Independent Labour Party; *Ind* = Independent ; *L.* = Liberal ; *L. Nat* = Liberal Nationalist ; *Lab.* = Labour ; *N. Lab.* = National Labour ; *Nat.* = Nationalist ; *N. Abst.* = National Abstentionist.)

Constituency	Member	Majority
Aberdeen, *North*	G M GARRO-JONES	*Lab.* 2,962
,, *South*	Sir J. D. W. THOMSON, Bt.	*C.* 13,453
Aberdeen & Kincardine		
Central	Sir R. W. SMITH	*C.* 8,569
Eastern	R. J. G. BOOTHBY	*C.* 3,121
Kincardine & Western	Sir C. M. BARCLAY-HARVEY	*C.* 2,636
Accrington	Maj. H. A. PROCTER	*C.* 4,070
Anglesey	Megan LLOYD GEORGE	*Ind. L.* 4,128
Antrim (2)	Maj. Rt. Hon. Sir Hugh O'NEILL, Bt.	*C.* unopp.
	Sir Joseph M'CONNELL, Bt.	*C.* unopp.
Argyll	F. A. MACQUISTEN, K.C.	*C.* 1,774
Armagh	Lt.-Col. Sir W. J. ALLEN	*C.* unopp.
Ashton-under-Lyne	F. B. SIMPSON	*Lab.* 14
Ayr and Bute		
Bute and Northern	Lt.-Col. Sir C. G. MACANDREW	*C.* 9,033
Kilmarnock	Kenneth LINDSAY	*N. Lab.* 6,557
South Ayrshire	Rt. Hon. James BROWN	*Lab.* 4,804
Ayr Burghs	Lt.-Col. Sir T. C. RUSSELL MOORE	*C.* 12,619
Banff	Sir J. E. FINDLAY, Bt.	*C.* 603
Barnsley	Frank COLLINDRIDGE	*Lab.* 10,514
	(*By-election June* 16, 1938)	
Barrow-in-Furness	Sir J. WALKER-SMITH	*C.* 217
Bath	T. L. E. B GUINNESS	*C.* 12,020
Batley and Morley	W. BROOKE	*Lab.* 2,828
Battersea, *North*	W. S. SANDERS	*Lab.* 5,203
,, *South*	H. R. SELLEY	*C.* 5,447
Bedfordshire, *Bedford*	Sir Sydney WELLS	*C.* 8,872
,, *Luton*	Rt. Hon. E. Leslie BURGIN	*L. Nat.* 13,628
,, *Mid-*	A. T. LENNOX-BOYD	*C.* 4,431
Belfast, *East*	Capt. Rt. Hon. H. DIXON	*C.* unopp.
,, *North*	Thomas SOMERSET	*C.* unopp.
,, *South*	W. J. STEWART	*C.* unopp
,, *West*	A. C. BROWNE	*C.* 13,747
Berkshire, *Abingdon*	Maj. Sir R. G. C. GLYNN, Bt.	*C.* unopp.
,, *Newbury*	Brig -Gen. H. CLIFTON BROWN	*C.* 15,517
,, *Windsor*	A. A. SOMERVILLE	*C.* unopp.
Bermondsey		
Rotherhithe	Ben SMITH	*Lab.* 4,665
West	Dr. A. SALTER	*Lab.* 4,929
Berwick & Haddington	J. H. F. MCEWEN	*C.* 5,540
Bethnal Green		
North-east	D. CHATER	*Lab.* 4,937
South-west	Sir P. A. HARRIS, Bt.	*L.* 1,066
Birkenhead, *East*	H Graham WHITE	*L.* 6,694
,, *West*	Lt -Col. J. S. ALLEN	*C.* 3,753
Birmingham		
Aston	Capt. Hon A O. J. HOPE	*C.* 10,355
Deritend	Sir Smedley CROOKE	*C.* 4,781
Duddeston	O E. SIMMONDS	*C* 3,262
Edgbaston	Rt Hon. Neville CHAMBERLAIN	*C.* 21,862
Erdington	Squadron-Ldr. J. A C. WRIGHT	*C.* 6,234
	(*By-election, Oct* 20, 1936)	
Handsworth	Com. O. LOCKER-LAMPSON	*C* 15,225
King's Norton	J. R. H. CARTLAND	*C.* 5,875
Ladywood	G W. LLOYD	*C.* 11,254
Moseley	Sir P. J. H HANNON	*C* 26,342
Sparkbrook	Lt -Col Rt Hon. L C. S. AMERY	*C.* 9,446
West	W F. HIGGS	*C.* 2,920
	(*By-election, April* 29, 1937)	
Yardley	E. W. SALT	*C.* 6,838
Blackburn (2)	Capt. G. S ELLISTON	*C.* 3,361
	Lt -Col Sir W. D. SMILES	*C.* 3,198
Blackpool	J. R ROBINSON	*C.* 34,916
Bolton (2)	Maj Sir C. F. ENTWISTLE	*C.* 14,239
	Sir John HASLAM	*C.* 12,575
Bootle	Eric ERRINGTON	*C.* 3,368
Bournemouth	Brig -Gen. Sir H. PAGE-CROFT, Bt.	*C.* 19,366
Bradford, *Central*	W LEACH	*Lab.* 1,156
,, *East*	J HEPWORTH	*C.* 2,148
,, *North*	Sir E. J. S H. RAMSDEN, Bt	*C.* 7,103
,, *South*	H HOLDSWORTH	*L.* 6,960
Brecon and Radnor	Hon. Ivor GUEST	*Nat.* 2,169
Brighton (2)	Maj. Rt. Hon. G C. TRYON	*C.* 40,626
	Com. Sir COOPER RAWSON	*C.* 40,437
Bristol, *Central*	Lord APSLEY	*C.* 1,516
,, *East*	Hon Sir S CRIPPS	*Lab.* 6,883
,, *North*	R. H. BERNAYS	*L.* 4,828
,, *South*	A G WALKDEN	*Lab.* 2,433
,, *West*	C T. CULVERWELL	*C.* 21,762
Bromley	Sir E. T. CAMPBELL	*C* 27,941
Buckinghamshire		
Aylesbury	Sir Stanley REED	*C.* 10,944
	(*By-election, May* 19, 1938)	
Buckingham	Maj. J. P. WHITELEY	*C.* 9,099
	(*By-election, June* 11, 1937)	
Wycombe	Maj -Gen. Sir A. W. F. KNOX	*C.* 15,903
Burnley	W. A. BURKE	*Lab.* 4,195
Bury	A E. L CHORLTON	*C.* 5,580
Caernarvon	Major G. OWEN	*Ind. L.* 1,497
Caernarvon District	Rt. Hon. David LLOYD GEORGE	*Ind. L* 9,609
Caithness & Sutherland	Rt. Hon. Sir A. H. M. SINCLAIR, Bt.	*L.* 7,490
Camberwell, *Dulwich*	Bracewell SMITH	*C.* 9,729
,, *North*	C. G. AMMON	*Lab.* 5,777
,, *North-west*	Maj. Hon. O. M. GUEST	*C.* 813
,, *Peckham*	L. SILKIN	*Lab.* 100
	(*By-election, May* 6, 1936)	
Cambridge	Lt -Com. R. L. TUFNELL	*C.* 5,491
Cambridgeshire	Capt. R. G. BRISCOE	*C.* 7,650
Cambridge University (2)	Sir John James WITHERS	*C.* 4,149
	K. W. M. PICKTHORN	*C* 3,464
Cardiff, *Central*	Capt. Sir. E N. BENNETT	*N. Lab.* 4,860
,, *East*	O. T. MORRIS	*C.* 4,686
,, *South*	Capt. Arthur EVANS	*C.* 541
Cardigan	D. Owen EVANS	*L.* 5,761
Carlisle	Brig.-Gen. E. L. SPEARS	*C.* 3,635
Carmarthen		
Carmarthen	Maj. D. HOPKINS	*Lab.* 5,235
Llanelly	James GRIFFITHS	*Lab.* 16,221
	(*By-election, March* 26, 1936)	
Chelsea	Lt -Col. Rt. Hon. Sir S HOARE, Bt.	*C.* 12,644
Cheltenham	D. L. LIPSON	*Ind. C.* 339
	(*By-election, June* 22, 1937)	
Cheshire		
Altrincham	Lt -Col. Sir E. W. M. GRIGG	*C.* 29,226
City of Chester	Sir C. CAYZER, Bt	*C.* 6,699
Crewe	Sir Donald B. SOMERVELL	*C.* 1,109
Eddisbury	R. J. RUSSELL	*L. Nat.* unopp.
Knutsford	Brig.-Gen. E. MAKINS	*C.* 12,999
Macclesfield	J. R. REMER	*C.* 9,488
Northwich	Lord Colum CRICHTON-STUART	*C.* 4,027
Stalybridge and Hyde	H. B. T. COX	*C.* 334
	(*By-election, April* 28, 1937)	
Wirral	Capt. A. C GRAHAM	*C.* 25,816
City of London (2)	Sir A. G. ANDERSON	*C.* unopp.
	Sir George BROADBRIDGE, Bt.	*C.* unopp.
	(*By-election, April* 6, 1938)	
Combined English Universities (2)	Eleanor RATHBONE	*Ind.* unopp.
	T. E. HARVEY	*Ind* 1,644
	(*By-election, March* 22, 1937)	
Cornwall		
Bodmin	J. R. RATHBONE	*C.* 2,753
Camborne	Lt.-Com. P. G. AGNEW	*C.* 6,905
Northern	Rt. Hon. Sir F. D. ACLAND, Bt.	*L.* 836
Penryn and Falmouth	M. PETHERICK	*C.* 3,031
St. Ives	A. L. BEECHMAN	*L. Nat.* 210
	(*By-election, June* 30, 1937)	
Coventry	Capt. W. F. STRICKLAND	*C.* 2,472
Croydon, *North*	Lt.-Col. G. K. M. MASON	*C.* 18,511
,, *South*	H. G. WILLIAMS	*C.* 17,071
Cumberland		
Northern	W. H. W. ROBERTS	*L.* 894
Penrith & Cockermouth	Capt. A. V. G. DOWER	*C.* 6,460
Whitehaven	Frank ANDERSON	*Lab.* 352
Workington	Tom CAPE	*Lab.* unopp.
Darlington	C. U. PEAT	*C.* 4,215
Denbigh, *Denbigh*	Sir J. H. MORRIS-JONES	*L. Nat.* 5,043
,, *Wrexham*	R. RICHARDS	*Lab.* 5,283
Deptford	W. H. GREEN	*Lab.* 6,892
Derby (2)	W. A. REID	*C.* 12,670
	P. J. NOEL-BAKER	*Lab.* 2,753
	(*By-election, July* 9, 1936)	
Derbyshire		
Belper	Herbert WRAGG	*C.* 828
Chesterfield	George BENSON	*Lab.* 4,884



Fox Photos]

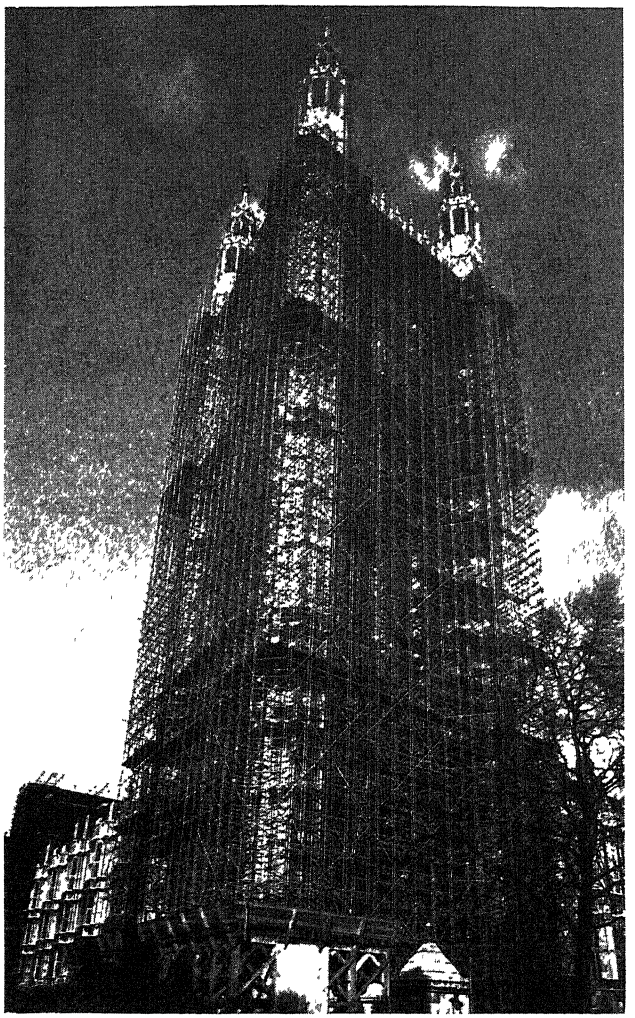
THE HOUSE OF LORDS, WESTMINSTER, LONDON

Constituency	Member		Majority
Derbyshire			
Clay Cross	G. RIDLEY	*Lab.*	16,248
High Peak	Sir Alfred LAW	*C.*	9,586
Ilkeston	G. H. OLIVER	*Lab*	10,331
North-eastern	Frank LEE	*Lab*	9,580
Southern	P V. EMRYS-EVANS	*C*	1,859
Western	Henry HUNLOKE (*By-election, June* 2, 1938)	*C.*	5,524
Devonshire			
Barnstaple	R. T. Dyke ACLAND	*L.*	454
Honiton	C. DREWE	*C.*	13,889
South Molton	Rt Hon. George LAMBERT	*L. Nat.*	15,157
Tavistock	C M PATRICK	*C.*	4,053
Tiverton	Lt -Col. G. J ACLAND-TROYTE	*C.*	unopp.
Torquay	Comr. Charles WILLIAMS	*C.*	17,935
Totnes	Maj. R RAYNER	*C.*	7,716
Dewsbury	Ben RILEY	*Lab.*	5,268
Dorset, *Eastern*	G. R. HALL CAINE	*C.*	14,173
,, *Northern*	Capt. A. V. HAMBRO (*By-election, July* 13, 1937)	*C.*	543
,, *Southern*	Viscount CRANBORNE	*C.*	9,057
,, *Western*	Maj. W. P. COLFOX	*C.*	3,608
Down (2)	Sir D. D. REID, Bt	*C.*	46,088
	Viscount CASTLEREAGH	*C.*	45,593
Dudley	D. J. B. JOEL	*C.*	2,449
Dumbarton	T. CASSELLS (*By-election, March* 18, 1936)	*Lab.*	984
Dumbarton District	D. KIRKWOOD	*Lab.*	9,500
Dumfries	Sir Henry FILDES	*L. Nat.*	10,368
Dundee (2)	Florence HORSBRUGH	*C.*	6,085
	D. M. FOOT	*L.*	5,175
Dunfermline District	W. McL. WATSON	*Lab.*	1,423
Durham			
Barnard Castle	T. M SEXTON	*Lab.*	1,320
Bishop Auckland	Dr. Hugh DALTON	*Lab.*	8,086
Blaydon	W. WHITELEY	*Lab*	9,526
Chester-le-Street	John L. LAWSON	*Lab.*	17,210
Consett	David ADAMS	*Lab.*	7,522
Durham	J. RITSON	*Lab.*	6,607
Houghton-le-Spring	W. J. STEWART	*Lab.*	7,675
Jarrow	Ellen WILKINSON	*Lab.*	2,350
Seaham	E. SHINWELL	*Lab.*	20,498
Sedgefield	J. R. LESLIE	*Lab.*	1,771
Spennymoor	J. BATEY	*Lab.*	12,777
Ealing	Sir F. B. SANDERSON, Bt.	*C.*	18,500
East Ham, *North*	Lt.-Col. J. MAYHEW	*C.*	533
,, *South*	A. J. BARNES	*Lab.*	5,956
Eccles	R. A. CARY	*C.*	2,255
Edinburgh, *Central*	J. C. Morrison GUY	*C.*	2,953
,, *East*	Rt. Hon. F. W. PETHICK-LAWRENCE	*Lab.*	1,112
,, *North*	A. G. Erskine HILL	*C.*	12,122
,, *South*	Sir Samuel CHAPMAN	*C.*	21,889
,, *West*	Rt. Hon. T. M. COOPER	*C.*	14,229
Edmonton	F. A. BROAD	*Lab.*	4,127
Essex, *Chelmsford*	Capt. J. R. J. MACNAMARA	*C.*	16,624
,, *Colchester*	Oswald LEWIS	*C.*	5,876
,, *Epping*	Rt. Hon. W. S CHURCHILL	*C.*	20,419
Essex, *Harwich*	J S. HOLMES	*L. Nat.*	12,546
,, *Maldon*	Col. Sir E. A. RUGGLES-BRISE, Bt	*C*	7,808
,, *Romford*	H. J. PARKER	*Lab.*	8,307
,, *Saffron Walden*	R A. BUTLER	*C.*	10,036
,, *South-eastern*	H. V. A M. RAIKES	*C.*	970
Exeter	A. C. RFED	*C.*	7,518
Fermanagh & Tyrone (2)	P CUNNINGHAM	*N Abst.*	4,266
	A J MULVEY	*N. Abst.*	3,978
Fife, *Eastern*	J. H. STEWART	*L. Nat*	21 896
,, *Western*	W. GALLACHER	*Com.*	593
Finsbury	Rev. G S. WOODS	*Lab.*	2,808
Flint	G. ROWLANDS	*C.*	10,108
Forfarshire	Capt. W. T. SHAW	*C*	4,583
Fulham, *East*	Hon W W. ASTOR	*C*	1,054
,, *West*	Dr. Edith SUMMERSKILL (*By-election, April* 6, 1938)	*Lab.*	1,421
Galloway	J. H. MCKIE	*C.*	unopp
Gateshead	T. MAGNAY	*L. Nat.*	2,968
Glamorgan			
Aberavon	W. G COVE	*Lab.*	unopp.
Caerphilly	Morgan JONES	*Lab.*	17,108
Gower	D. R. GRENFELL	*Lab.*	13,393
Llandaff and Barry	P. M. MUNRO	*C.*	1,422
Neath	Sir W. JENKINS	*Lab.*	unopp.
Ogmore	E. J. WILLIAMS	*Lab.*	unopp
Pontypridd	Arthur PEARSON (*By-election, Feb.* 11, 1938)	*Lab.*	7,349
Glasgow, *Bridgeton*	James MAXTON	*I.L.P.*	8,740
,, *Camlachie*	Rev. Campbell STEPHEN	*I L.P.*	884
,, *Cathcart*	Sir John TRAIN	*C*	8,336
,, *Central*	Brig -Gen. Sir W. ALEXANDER	*C.*	3,521
,, *Gorbals*	G. BUCHANAN	*I L.P*	17,036
,, *Govan*	Neil MACLEAN	*Lab.*	5,580
,, *Hillhead*	J. S. C. REID (*By-election, June* 10, 1937)	*C*	6,337
,, *Kelvingrove*	Rt. Hon W. E ELLIOT	*C.*	149
,, *Maryhill*	J. J. DAVIDSON	*Lab.*	3,971
,, *Partick*	A. S L YOUNG	*C.*	2,300
,, *Pollok*	Lt -Col Rt. Hon. Sir John GILMOUR, Bt	*C.*	13,738
,, *St. Rollox*	William LEONARD	*Lab*	6,297
,, *Shettleston*	J. MCGOVERN	*I L.P.*	4,575
,, *Springburn*	Mrs. G. D. HARDIE (*By-election, Sept.* 7, 1937)	*Lab.*	5,978
,, *Tradeston*	T. HENDERSON	*Lab.*	1,899
Gloucester	H. Leslie BOYCE	*C.*	3,879
Gloucestershire			
Cirencester & Tewkesbury	Rt. Hon. W. S. MORRISON	*C.*	unopp.
Forest of Dean	M. P PRICE	*Lab.*	4,431
Stroud	W. R. D. PERKINS	*C.*	10,149
Thornbury	Capt. Sir Derrick GUNSTON, Bt.	*C.*	4,016
Great Yarmouth	Arthur HARBORD	*L. Nat.*	5,330
Greenock	R. GIBSON (*By-election, Nov.* 26, 1936)	*Lab.*	2,604
Greenwich	Sir George HUME	*C.*	2,088
Grimsby	Sir W. J. WOMERSLEY	*C.*	1,727
Hackney, *Central*	F. C. WATKINS	*Lab.*	957

Constituency	Member	Majority
Hackney, *North*	Capt. A. U. M. Hudson	*C.* 1,080
,, *South*	Rt. Hon Herbert Morrison	*Lab.* 4,954
Halifax	Gilbert Gledhill	*C.* 2,632
Hammersmith, *North*	D N. Pritt	*Lab* 1,634
,, *South*	J. D. Cooke	*C* 6,668
Hampshire		
Aldershot	Rt Hon Viscount Wolmer	*C.* 11,309
Basingstoke	P W. Donner	*C* 8,232
Fareham	Rt Hon Sir T W. H. Inskip	*C* 21,233
New Forest and Christchurch	Maj J D Mills	*C* 21,333
Petersfield	Maj Sir R. H Dorman-Smith	*C.* 16,816
Winchester	G E H. Palmer	*C* 12,767
Hampstead	George Balfour	*C* 21,347
Hartlepools, The	W G Howard Gritten	*C.* 4,897
Hastings	M R Hely-Hutchinson (*By-election, Nov* 24, 1937)	*C.* 7,184
Hereford, *Hereford*	J P. L Thomas	*C.* 9,381
,, *Leominster*	Sir E. W. Shepperson	*C* 3,567
Hertford		
Hemel Hempstead	The Viscountess Davidson (*By-election, June* 22, 1937)	*C* 7,645
Hertford	Rear-Adm Sir Murray F Sueter	*C.* 9,701
Hitchin	Lt.-Col. Sir A. T Wilson	*C* 9,035
St Albans	Lt.-Col. Sir F E Fremantle	*C* 17,510
Watford	Rt. Hon Sir Dennis Herbert	*C* 13,290
Holborn	Maj Sir R. I. Tasker	*C* 7,329
Hornsey	Capt Rt Hon D Euan Wallace	*C.* 20,174
Huddersfield	W. Mabane	*L. Nat.* 13,165
Huntingdonshire	Dr. S. J. Peters	*L Nat.* 9,426
Hythe	Maj. Rt. Hon. Sir P Sassoon, Bt.	*C* 6,671
Ilford	G Hutchinson (*By-election, June* 29, 1937)	*C* 9,319
Inverness and Ross and Cromarty		
Inverness	Sir M. Macdonald	*L Nat.* 7,688
Ross and Cromarty	Rt. Hon. Malcolm MacDonald (*By-election, Feb.* 10, 1936)	*N Lab.* 2,982
Western Isles	M. K. MacMillan	*Lab* 1,345
Ipswich	R R Stokes (*By-election, Feb.* 16, 1938)	*Lab* 3,161
Isle of Ely	James A. E de Rothschild	*L.* 699
Isle of Wight	Capt P. D. Macdonald	*C* 11,162
Islington, *East*	Thelma Cazalet	*C* 4,438
,, *North*	Dr. L. Haden Guest (*By-election, Oct.* 13, 1937)	*Lab* 1,296
,, *South*	W. S. Cluse	*Lab* 1,128
,, *West*	F. Montague	*Lab* 2,060
Kensington, *North*	J. A L Duncan	*C.* 3,598
,, *South*	Sir W. H. Davison	*C.* 33,518
Kent, *Ashford*	W. P. Spens	*C.* 12,985
,, *Canterbury*	Lt.-Col. Sir W. Wayland	*C.* 17,388
,, *Chislehurst*	Sir Waldron Smithers	*C.* 26,478
,, *Dartford*	Mrs. J L Adamson (*By-election, Nov.* 7, 1938)	*Lab* 4,238
,, *Dover*	Maj. Hon J. Astor	*C.* 11,296
,, *Faversham*	Adam Maitland	*C.* 3,821
,, *Gravesend*	Sir Irving J. Albery	*C.* 4,444
,, *Isle of Thanet*	Capt. H. H. Balfour	*C.* unopp.
,, *Maidstone*	Alfred C. Bossom	*C.* 15,304
,, *Sevenoaks*	Col. Charles Ponsonby	*C.* 11,108
,, *Tonbridge*	Sir A. W. Maxwell Baillie, Bt. (*By-election, March* 23, 1937)	*C.* 10,655
Kingston-upon-Hull		
Central	W. Windsor	*Lab.* 1,620
East	G. Muff	*Lab.* 3,606
North-west	Col. Sir A. Lambert Ward, Bt.	*C.* 5,234
South-west	Richard K. Law	*C.* 3,431
Kingston-upon-Thames	Adm. P. M R. Royds (*By-election, July* 1, 1937)	*C.* 9,915
Kirkcaldy District	Rt. Hon. Tom Kennedy	*Lab.* 4,371
Lambeth, *Brixton*	N. C. Colman	*C.* 6,506
,, *Kennington*	Sir George Harvey	*C.* 545
,, *North*	G. R. Strauss	*Lab.* 2,056
,, *Norwood*	D. Sandys	*C.* 12,456
Lanark, *Bothwell*	J. C. Welsh	*Lab.* 7,139
,, *Coatbridge*	Rev. J. Barr	*Lab.* 4,414
,, *Hamilton*	Duncan Graham	*Lab.* 8,165
,, *Lanark*	Lord Dunglass	*C.* 6,809
,, *Motherwell*	J. Walker	*Lab.* 430
,, *Northern*	W. J. Anstruther-Gray	*C.* 5,034
,, *Rutherglen*	A. Chapman	*C.* 581
Lancashire		
Chorley	Rt Hon. D. H. Hacking	*C.* 5,775
Clitheroe	Capt. Sir W. Brass	*C.* 3,752
Darwen	S. H. M. Russell	*C.* 1,164
Farnworth	George Tomlinson (*By-election, Jan* 27, 1938)	*Lab.* 7,463
Fylde	Capt. C. G. Lancaster (*By-election, Nov.* 30, 1938)	*C.* 20,615
Heywood & Radcliffe	R. W. Porritt	*C.* 9,416
Ince	Gordon Macdonald	*Lab.* 16,406
Lancaster	H. Ramsbotham	*C.* 13,578
Lonsdale	Lord Balniel	*C.* 9,392
Middleton & Prestwich	Sir A. N. Stewart-Sandeman, Bt.	*C.* 9,971
Mossley	Austin Hopkinson	*Nat.* 2,170
Newton	Sir Robert Young	*Lab.* 5,791
Ormskirk	Sir S. T. Rosbotham	*N. Lab.* 8,045
Royton	H. Sutcliffe	*C.* 10,600
Stretford	A. C. Crossley	*C.* 15,596
Waterloo	Capt. H. M. Bullock	*C.* unopp.
Westhoughton	R. J. Davies	*Lab.* 7,242
Widnes	R. A. Pilkington	*C.* 527
Leeds, *Central*	Hon. Richard Denman	*N. Lab.* 4,046
,, *North*	Capt. Osbert Peake	*C.* 16,844
,, *North-east*	Maj. Sir J. D. Birchall	*C.* 11,835
,, *South*	H. C. Charleton	*Lab.* 1,016
,, *South-east*	Maj J. Milner	*Lab.* 9,360
,, *West*	S. V. T. Adams	*C.* 3,234
Leicester, *East*	A. M. Lyons	*C.* 2,910
,, *South*	Capt. C. Waterhouse	*C.* 11,473
Leicester, *West*	Hon. Harold Nicolson	*N. Lab.* 87
Leicestershire		
Bosworth	Sir William Edge, Bt.	*L Nat* 7,153
Harborough	Ronald Tree	*C* 10,590
Loughborough	Lawrence Kimball	*C* 743
Melton	W. Lindsay Everard	*C* 13,621
Leigh	J. J Tinker	*Lab* unopp.
Leith	Rt Hon Ernest Brown	*L Nat* 5,070
Lewisham, *East*	Lt.-Col. Sir Assheton Pownall	*C.* 6,449
,, *West*	Henry Brooke (*By-election, Nov* 24, 1938)	*C* 5,648
Leyton, *East*	Sir F Mills, Bt.	*C* 329
,, *West*	Rev R. W. Sorensen	*Lab.* 128
Lincoln	W. S Liddall	*C* 2,684
Lincolnshire		
Brigg	D J. K. Quibell	*Lab.* 203
Gainsborough	Capt H F C. Crookshank	*C* 1,757
Grantham	Sir Victor Warrender, Bt.	*C* 6,185
Holland with Boston	H. G Butcher (*By-election, June* 24, 1937)	*L. Nat.* 7,290
Horncastle	Henry C. Haslam	*C.* 9,612
Louth	Lt.-Col. A P Heneage	*C.* 7,444
Rutland and Stamford	Lord Willoughby de Eresby	*C.* 5,561
Linlithgow	G Mathers	*Lab.* 3,175
Liverpool, *East Toxteth*	P G T. Buchan-Hepburn	*C.* 7,016
,, *Edgehill*	A Critchley	*C.* 301
,, *Everton*	B V Kirby	*Lab.* 177
,, *Exchange*	Col Sir J J. Shute	*C.* 4,412
,, *Fairfield*	Sir C. E. R Brocklebank	*C.* 7,441
,, *Kirkdale*	Sir R. Rankin, Bt	*C.* 556
,, *Scotland*	D. G. Logan	*Lab.* 7,664
,, *Walton*	R. Purbrick	*C.* 8,544
,, *Wavertree*	Maj. P. S Shaw	*C* 7,847
,, *West Derby*	D. P M. Fyfe	*C* 10,978
,, *West Toxteth*	J. Gibbins	*Lab.* 2,004
London University	Sir E. G. Graham-Little	*Ind C.* 5,040
Londonderry	Maj. Sir Ronald Ross, Bt	*C* unopp.
Manchester, *Ardwick*	Joseph Henderson	*Lab* 1,808
,, *Blackley*	J. Lees-Jones	*C.* 5,462
,, *Clayton*	J. H. Jagger	*Lab.* 2,668
,, *Exchange*	P T Eckersley	*C.* 7,643
,, *Gorton*	Capt Rt Hon. W. W. Benn (*By-election, Feb.* 18, 1937)	*Lab.* 4 758
,, *Hulme*	Col. Sir J. Nall	*C.* 5,851
,, *Moss Side*	W. R. Duckworth	*C.* 4,505
,, *Platting*	Rt. Hon J. R. Clynes	*Lab.* 1,337
,, *Rusholme*	E. A. Radford	*C.* 10,420
,, *Withington*	E L Fleming	*C.* 23,316
Merioneth	Sir H. Haydn Jones	*L.* 1,149
Merthyr Tydfil		
Aberdare	G. H Hall	*Lab* unopp.
Merthyr	S. O. Davies	*Lab.* 10,890
Middlesbrough, *East*	A. Edwards	*Lab.* 67
,, *West*	F. Kingsley Griffith	*L* 925
Middlesex		
Acton	H. J. Duggan	*C.* 5,578
Brentford & Chiswick	H. P. Mitchell	*C.* 8,272
Enfield	B. Bull	*C.* 5,503
Finchley	J. F. E. Crowder	*C.* 18,040
Harrow	Maj. Sir I. Salmon	*C.* 21,307
Hendon	Sir Reginald Blair	*C.* 41,387
Spelthorne	Sir Reginald Blaker	*C.* 16,196
Twickenham	E. H. Keeling	*C.* 14,812
Uxbridge	Col. J J. Llewellin	*C.* 10,727
Wood Green	A. Beverley Baxter	*C.* 21,823
Midlothian and Peebles		
Northern	Lt.-Col. Rt. Hon. David John Colville	*C.* 9,741
Peebles and Southern	Capt. A. H. M. Ramsay	*C.* 1,462
Monmouth, *Abertillery*	George Daggar	*Lab.* unopp.
,, *Bedwellty*	Sir Charles Edwards	*Lab.* unopp
,, *Ebbw Vale*	Aneurin Bevan	*Lab.* 1,786
,, *Monmouth*	Maj. A. J. Herbert	*C.* 9,808
,, *Pontypool*	A. Jenkins	*Lab.* 1,791
Montgomery	E. C. Davies	*L. Nat.* unopp.
Montrose District	Lt.-Col. Charles Iain Kerr	*L. Nat.* 8,566
Moray and Nairn	Hon James Stuart	*C.* 5,408
Morpeth	R. J. Taylor	*Lab.* 8,956
Nelson and Colne	S. S. Silverman	*Lab.* 4,315
Newcastle-under-Lyme	Col. Rt. Hon. J. C. Wedgwood	*Lab.* unopp.
Newcastle-upon-Tyne		
Central	A. Denville	*C.* 4,955
East	Sir R. W. Aske, Bt.	*L. Nat.* 7,094
North	Sir N Grattan-Doyle	*C.* 17,990
West	Dr. J. W. Leech	*C.* 8,474
Newport	Sir Reginald J Clarry (*Vacant*)	*C.* 1,545
Norfolk, *Eastern*	Capt. Hon. S. A. Maxwell	*C.* 5,430
,, *King's Lynn*	T. R. A. M. Cook	*C.* 3,398
,, *Northern*	J. A. Christie	*C.* 5,011
,, *Southern*	Somerset S. de Chair	*C.* 4,117
,, *South-western*	Lt.-Col. Sir Mervyn Manningham-Buller, Bt.	*C.* 1,455
Northampton		
Northamptonshire		
Daventry	Capt. Rt. Hon. E. A FitzRoy	*C.* 8,177
Kettering	J. F. Eastwood	*C.* 1,843
Peterborough	Lord Burghley	*C.* 5,304
Wellingborough	Wing-Comm. A. W. H. James	*C.* 372
Northumberland		
Berwick-upon-Tweed	Sir Hugh Seely, Bt.	*L.* 634
Hexham	Col D. C. Brown	*C.* 6,917
Wansbeck	Lt.-Col. B. Cruddas	*C.* 955
Norwich (2)	G. H. Shakespeare	*L. Nat.* 11,369
	H. G. Strauss	*C.* 9,512
Nottingham, *Central*	Sir T. J. O'Connor	*C.* 8,513
,, *East*	L. H. Gluckstein	*C.* 9,291
,, *South*	S. F. Markham	*N. Lab.* 4,596
,, *West*	A. Hayday	*Lab.* 2,701
Nottinghamshire		
Bassetlaw	F. J. Bellenger	*Lab.* 1,139
Broxtowe	Frederick Seymour Cocks	*Lab.* 11,050

Constituency	Member		Majority
Nottinghamshire			
Mansfield	Charles BROWN	*Lab.*	16,841
Newark	Marquess of TITCHFIELD	*C*	8,666
Rushcliffe	R. ASSHETON	*C*	12,971
Oldham (2)	H. W. KERR	*C*	2,422
	J S DODD	*L Nat*	439
Orkney and Shetland	Maj B H NEVEN-SPENCE	*C.*	2,226
Oxford City	Hon Quintin HOGG	*C*	3,134
	(*By-election, Oct* 27, 1938)		
Oxfordshire, *Banbury*	Maj Sir A J EDMONDSON	*C.*	10,448
Oxfordshire, *Henley*	Sir GIFFORD FOX, Bt.	*C*	12,770
Oxford University (2)	A. P HERBERT	*Ind.*	3,219
	Sir Arthur SALTER	*Ind.*	3,663
	(*By-election, Feb* 23-27, 1937)		
Paddington, *North*	B. BRACKEN	*C.*	7,228
,, *South*	Vice-Adm. E. A. TAYLOR	*C.*	15,622
Paisley	Hon. J P MACLAY	*L*	389
Pembroke	Maj G. LLOYD GEORGE	*Ind L.*	1,074
Perth and Kinross			
Kinross and Western	W McNAIR SNADDEN	*C*	1,313
	(*By-election, Dec.* 22, 1938)		
Perth	T. HUNTER	*C.*	14,802
Plymouth, *Devonport*	Maj. Rt. Hon L HORE-BELISHA	*L Nat*	11,096
,, *Drake*	Lt -Col. Hon. C. H. C. GUEST	*C*	4,734
	(*By-election, June* 15, 1937)		
,, *Sutton*	Viscountess ASTOR	*C*	6,097
Poplar, *Bow & Bromley*	Rt. Hon. George LANSBURY	*Lab.*	13,357
,, *South*	D M ADAMS	*Lab*	11,853
Portsmouth, *Central*	Hon. R. E. B. BEAUMONT	*C.*	10,845
,, *North*	Adm. of the Fleet Sir Roger KEYES, Bt	*C*	11,454
,, *South*	Maj. Sir H. R. CAYZER, Bt.	*C.*	18,373
Preston (2)	A. C. MOREING	*C.*	4,994
	Capt E. C. COBB	*C*	1,605
Queen's University, Belfast	Col. T SINCLAIR	*C.*	unopp
Reading	Dr. A. B. HOWITT	*C.*	4,591
Renfrew, *Eastern*	Marquess of CLYDESDALE	*C.*	13,646
,, *Western*	H. J SCRYMGEOUR-WEDDERBURN	*C*	3,499
Rhondda, *East*	W. H. MAINWARING	*Lab*	8,433
,, *West*	Will JOHN	*Lab.*	unopp
Richmond (Surrey)	Maj G. S HARVIE-WATT	*C*	12,837
	(*By-election, Feb* 25, 1937)		
Rochdale	W. T. KELLY	*Lab.*	1,795
Rochester, *Chatham*	Capt L. F. PLUGGE	*C.*	5,897
,, *Gillingham*	Sir Robert GOWER	*C.*	8,694
Rossendale	R H. CROSS	*C*	881
Rotherham	W. DOBBIE	*Lab.*	15,472
Roxburgh and Selkirk	Lord William MONTAGU-DOUGLAS-SCOTT	*C.*	6,078
St. Helens	W. A. ROBINSON	*Lab.*	3,981
St. Marylebone	Capt. A. S. CUNNINGHAM-REID	*C.*	23,175
St. Pancras, *North*	R GRANT-FERRIS	*C.*	268
	(*By-election, Feb* 4, 1937)		
,, *South-east*	Sir A. L. BEIT, Bt.	*C.*	1,636
,, *South-west*	Sir G. G. MITCHESON	*C.*	2,365
Salford, *North*	J. P. MORRIS	*C.*	4,632
,, *South*	Hon. J J. STOURTON	*C.*	304
,, *West*	J. F. EMERY	*C.*	4,513
Salop, *Ludlow*	Lt.-Col G. WINDSOR-CLIVE	*C.*	10,209
,, *Oswestry*	Maj. B E P. LEIGHTON	*C.*	unopp
,, *Shrewsbury*	G A V. DUCKWORTH	*C.*	8,795
,, *The Wrekin*	Col. J. BALDWIN-WEBB	*C.*	5,625
Scottish Universities (3)	J. Graham KERR	*C.*	4,387
	Dr G A. MORRISON	*L.*	3,664
	Rt. Hon Sir John ANDERSON	*C.*	8,424
	(*By-election, Feb.* 21-25, 1938)		
Sheffield, *Attercliffe*	C. H WILSON	*Lab.*	7,629
,, *Brightside*	F. MARSHALL	*Lab.*	5,518
,, *Central*	W. W. BOULTON	*C.*	420
,, *Ecclesall*	Sir Geoffrey ELLIS, Bt.	*C.*	14,646
,, *Hallam*	Sir L. W. SMITH	*C.*	10,952
,, *Hillsborough*	Rt. Hon. A. V. ALEXANDER	*Lab.*	3,304
,, *Park*	G LATHAN	*Lab.*	1,206
Shoreditch	E. THURTLE	*Lab.*	6,929
Smethwick	A. R. WISE	*C.*	1,552
Somerset			
Bridgwater	Vernon BARTLETT	*Ind.*	2,332
	(*By-election, Nov.* 18, 1938)		
Frome	Mrs. H. B. TATE	*C.*	994
Taunton	Lt.-Col. E. T R WICKHAM	*C.*	8,224
Wells	Lt.-Col. A. J. MUIRHEAD	*C.*	7,621
Weston-super-Mare	I. L. ORR-EWING	*C.*	19,852
Yeovil	Maj Sir G. F. DAVIES	*C.*	5,158
Southampton (2)	W. CRAVEN-ELLIS	*C.*	14,145
	Sir Charles BARRIE	*L. Nat*	12 946
Southend-on-Sea	H. CHANNON	*C.*	24,931
Southport	Rt Hon. R. S. HUDSON	*C.*	18,233
South Shields	J Chuter EDE	*Lab.*	9,099
Southwark, *Central*	Harry DAY	*Lab.*	1,363
,, *North*	E. A. STRAUSS	*L. Nat.*	79
,, *South-east*	T. E. NAYLOR	*Lab.*	4,997
Stafford, *Burton*	Col. Rt. Hon. J. GRETTON	*C.*	15,498
,, *Cannock*	W. M. ADAMSON	*Lab.*	1,046
,, *Kingswinford*	Arthur HENDERSON	*Lab.*	16
,, *Leek*	W. BROMFIELD	*Lab.*	6,013
,, *Lichfield*	C. C. POOLE	*Lab.*	826
	(*By-election, May* 5, 1938)		
,, *Stafford*	C. E. P. THORNEYCROFT	*C*	4,408
	(*By-election, June* 9, 1938)		
,, *Stone*	Sir J. Q. LAMB	*C.*	7,399
Stepney			
Limehouse	Maj. Rt. Hon. C. R. ATTLEE	*Lab.*	7,245
Mile End	D. FRANKEL	*Lab.*	3,318
Whitechapel and St. George's	J. H. HALL	*Lab.*	2,281
Stirling & Clackmannan			
Clackmannan & Eastern	L. MacNeill WEIR	*Lab.*	1,143
Western	Rt. Hon. T. JOHNSTON	*Lab.*	2,962
Stirling & Falkirk District	J. WESTWOOD	*Lab.*	871

Constituency	Member		Majority
Stockport (2)	Sir Arnold GRIDLEY	*C*	15,084
	N J HUIBERT	*C*	14,203
Stockton-on-Tees	Capt H MACMILLAN	*C*	4,068
Stoke Newington	Sir G. W. H JONES	*C.*	3,765
Stoke-upon-Trent			
Burslem	Andrew McLAREN	*Lab.*	2,803
Hanley	Arthur HOLLINS	*Lab*	1,331
Stoke	Ellis SMITH	*Lab*	2,125
Suffolk, East			
Eye	E. L GRANVILLE	*L Nat*	13,993
Lowestoft	P C LOFTUS	*C*	7,716
Woodbridge	W ROSS-TAYLOR	*C*	13,907
Suffolk, West			
Bury St Edmunds	Capt. F. F. A HEILGERS	*C.*	unopp.
Sudbury	Col H W. BURTON	*C.*	3,356
Sunderland (2)	S N FURNESS	*L Nat*	16,518
	Samuel STOREY	*C*	16,277
Surrey, *Chertsey*	Com A. MARSDEN	*C*	9,045
	(*By-election, July* 2, 1937)		
,, *Eastern*	C E G Campbell EMMOTT	*C.*	24,751
,, *Epsom*	Com Sir A. R J SOUTHBY, Bt.	*C.*	30,662
,, *Farnham*	Godfrey NICHOLSON	*C*	12,788
	(*By-election, March* 23, 1937)		
,, *Guildford*	Sir J. J. JARVIS, Bt.	*C.*	23,551
,, *Mitcham*	Sir R J. MELLER	*C.*	9,152
,, *Reigate*	G C. TOUCHE	*C.*	19,593
Sussex, East			
Eastbourne	C S TAYLOR	*C*	unopp.
East Grinstead	Lt.-Col R S. CLARKE	*C.*	16,499
	(*By-election, July* 23, 1936)		
Lewes	Rear-Adm P. H BRAMISH	*C.*	7,086
	(*By-election, June* 18, 1936)		
Rye	Col Rt. Hon Sir G. L. COURTHOPE, Bt.	*C*	13,442
Sussex, West			
Chichester	Maj J. S COURTAULD	*C.*	27,398
Horsham & Worthing	Rt. Hon. Earl WINTERTON	*C.*	29,012
Swansea, *East*	David WILLIAMS	*Lab*	unopp.
,, *West*	L. JONES	*L. Nat.*	2,081
Tottenham, *North*	R. C. MORRISON	*Lab*	8,009
,, *South*	Fred MESSER	*Lab.*	4,613
Tynemouth	Maj Sir A. West RUSSELL	*C*	5,858
Wakefield	Rt Hon. A. GREENWOOD	*Lab*	3,404
Wallasey	Lt.-Col J T. MOORE-BRABAZON	*C.*	14,458
Wallsend	Irene M. B. WARD	*C.*	2,379
Walsall	Sir G SCHUSTER	*L. Nat.*	7,158
	(*By-election, Nov.* 16, 1938)		
Walthamstow, *East*	Sir B. C. BEAUCHAMP, Bt.	*C.*	2,488
,, *West*	V. La T. McENTEE	*Lab.*	6,739
Wandsworth			
Balham and Tooting	Lt -Col. G DOLAND	*C.*	2,070
	(*By-election, July* 23, 1936)		
Central	Maj. H. L. NATHAN	*Lab.*	485
	(*By-election, April* 29, 1937)		
Clapham	Sir J. LEIGH, Bt.	*C.*	6,090
Putney	Marcus R. A. SAMUEL	*C.*	11,393
Streatham	Sir W. LANE-MITCHELL	*C.*	17,478
Warrington	N. B. GOLDIE	*C.*	604
Warwick			
Nuneaton	Lt.-Com. R. T H. FLETCHER	*Lab.*	5,237
Rugby	Capt. Rt. Hon. H. D. R. MARGESSON	*C.*	7,844
Tamworth	Sir J S. Paget MELLOR, Bt.	*C.*	31,649
Warwick & Leamington	Rt. Hon. R. Anthony EDEN	*C.*	24,816
Wednesbury	J. W. BANFIELD	*Lab*	2,800
Welsh University	Capt. Ernest EVANS	*L.*	1,028
West Bromwich	Rt. Hon. F. O ROBERTS	*Lab*	938
West Ham, *Plaistow*	Will THORNE	*Lab.*	11,763
,, *Silvertown*	J. J. JONES	*Lab.*	13,901
,, *Stratford*	T. E. GROVES	*Lab.*	5,975
,, *Upton*	B. W. GARDNER	*Lab.*	1,665
Westminster, *Abbey*	Capt. Sir S. HERBERT, Bt.	*C.*	12,862
,, *St. George's*	Rt Hon. A. Duff COOPER	*C.*	20,781
Westmorland	Maj. Rt. Hon. O F. G. STANLEY	*C.*	12,217
Wigan	J. A. PARKINSON	*Lab.*	10,304
Willesden, *East*	S. S HAMMERSLEY	*C.*	3,731
	(*By-election, July* 28, 1938)		
,, *West*	S. P. VIANT	*Lab.*	2,930
Wiltshire, *Chippenham*	Capt. V. A. CAZALET	*C.*	5,121
,, *Devizes*	Sir Percy A. HURD	*C.*	4,535
,, *Salisbury*	Maj. J. A. St. G FITZWARRENNE-DESPENCER-ROBERTSON	*C.*	12,448
,, *Swindon*	W. W. WAKEFIELD	*C.*	975
,, *Westbury*	R. V. GRIMSTON	*C.*	5,065
Wimbledon	Sir J. C. POWER, Bt.	*C.*	19,364
Wolverhampton			
Bilston	I. C. HANNAH	*C.*	869
East	G. Le M. MANDER	*L.*	4,000
West	Sir R. BIRD, Bt.	*C.*	4,830
Woolwich, *East*	E. G. HICKS	*Lab.*	4,842
,, *West*	Rt. Hon. Sir H. Kingsley WOOD	*C.*	7,276
Worcester	W. P. C. GREENE	*C.*	6,573
Worcestershire			
Bewdley	R. J. E. CONANT	*C.*	6,543
	(*By-election, June* 24, 1937)		
Evesham	R. De la BERE	*C.*	12,523
Kidderminster	Sir J. S. WARDLAW-MILNE	*C.*	16,099
Stourbridge	Robert H. MORGAN	*C.*	5,301
York	Hon. C. I. C. WOOD	*C.*	4,059
	(*By-election, May* 6, 1937)		
Yorkshire, East Riding			
Buckrose	Maj. A. N. BRAITHWAITE	*C.*	3,327
Holderness	(*Vacant*)		
Howdenshire	Maj. W. H. CARVER	*C.*	10,318
Yorkshire, North Riding			
Cleveland	Lt.-Com. R. T. BOWER	*C.*	2,732
Richmond	Maj. T. L. DUGDALE	*C.*	17,719
Scarborough & Whitby	Sir Paul LATHAM, Bt.	*C.*	6,542
Thirsk and Malton	Robert Hugh TURTON	*C.*	unopp.
Yorkshire, West Riding			
Barkston Ash	Col. L. ROPNER	*C.*	9,189
Colne Valley	E. MARKLEW	*Lab.*	3,779



Fox Photos]
THE VICTORIA TOWER, HOUSES OF PARLIAMENT, LONDON, ENCASED IN SCAFFOLDING DURING RENOVATION, MARCH 7, 1938

Constituency	Member	Majority
Yorkshire, West Riding		
Doncaster	John MORGAN (*By-election, Nov* 17, 1938)	*Lab* 11,708
Don Valley	T. WILLIAMS	*Lab.* 18,259
Elland	T. LEVY	*C.* 1,742
Hemsworth	George Arthur GRIFFITHS	*Lab* 21,266
Keighley	Rt. Hon H. B. LEES-SMITH	*Lab.* 368
Normanton	Tom SMITH	*Lab.* 20,599
Penistone	H. G. MCGHEE	*Lab.* 3,086
Pontefract	A. HILLS	*Lab.* 2,526
Pudsey and Otley	Sir C. Granville GIBSON	*C.* 11,425
Ripon	(*Vacant*)	
Rother Valley	E DUNN	*Lab* 20,364
Rothwell	William LUNN	*Lab.* 14,120
Shipley	A. C. JONES	*Lab.* 4,507
Skipton	G W. RICHARDS	*C.* 5,059
Sowerby	M. S. MCCORQUODALE	*C.* 2,672
Spen Valley	Rt. Hon. Sir John SIMON	*L. Nat.* 642
Wentworth	Wilfred PALING	*Lab.* 29,304

House of Lords. The number of peers entitled to sit in the House of Lords (excluding 24 temporarily debarred by minority) was (end-1938) 761, comprised as follows: 4 peers of the blood royal, 2 archbishops, 20 dukes, 27 marquesses, 122 earls, 83 viscounts, 24 bishops, 449 barons, and 16 Scottish and 14 Irish representative peers. Of the total only about 10 per cent attend the debates, except on extraordinary occasions.

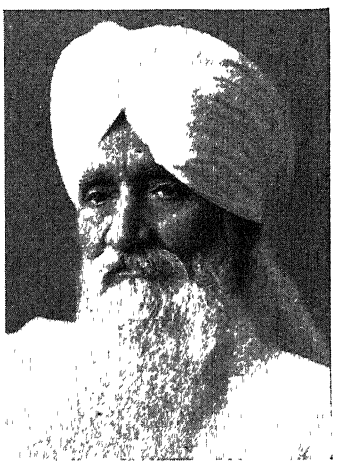
The Lord Chancellor presides over the debates as Speaker, though without his other functions; in 1938 the Rt. Hon. the Earl of Onslow was Chairman of Committees, and Viscount Halifax (Foreign Secretary) leader of the House, the Opposition Leaders being Lord Snell (Labour) and the Marquess of Crewe (Liberal).

PATIALA, H.H. SIR BHUPINDAR SINGH MAHINDAR BAHADUR, MAHARAJA OF, was born on Oct 12, 1891, and died on March 23, 1938 He succeeded his father, Maharaja Rajindra Singh, in Nov. 1900, when he was only nine years old, and assumed full power in 1909 His Highness was an indefatigable supporter of the British cause in the World War, and afterwards during the Punjab troubles in 1919. Although his impulsiveness led him into some awkward situations, his essential generosity and loyalty to the Empire were of great value during the process of preparing for the Government of India Act His Highness was a keen cricketer, and captained the Indian team which visited England in 1911. His honours included the G C.S.I., G.C I.E , G.C V.O., and G.B E., and he was an extra honorary A.D.C. to His Majesty the King.



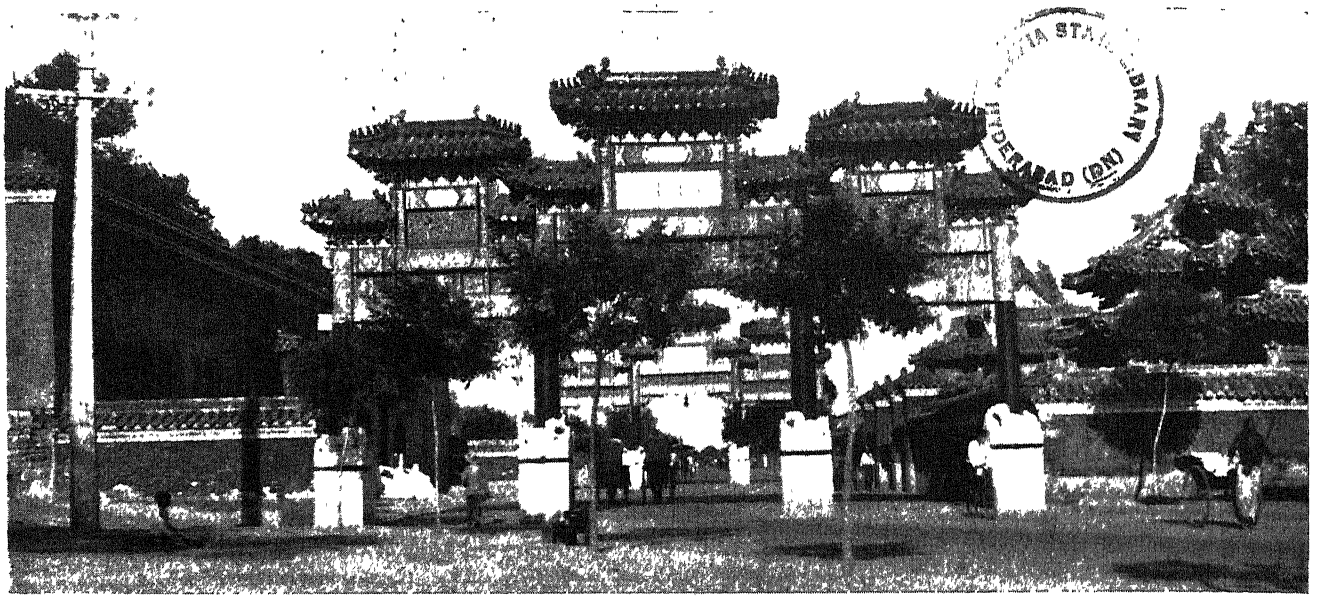
Vandyk]
THE MAHARAJAH OF PATIALA

PATTANI, SIR PRABHASHANKAR DALPATRAM, Indian statesman, was born in 1862, and died at Bombay on Feb. 16, 1938. From 1896 until his retirement in 1937, Sir Prabhashankar was closely associated with the administration of the Kathiawar State of Bhavnagar, and won the respect of all with whom he came in contact. He also served on the India Council, 1917–19; and was a delegate to the first and second sessions of the Round Table Conference. He was made a C.I.E. in 1910, and a K.C.I.E in 1915.



P. P. Bureau]
SIR PRABHASHANKAR PATTANI

PEKING. Till its occupation by the Japanese in the summer of 1937, at the beginning of the Sino-Japanese War (*q.v.*), Peking occupied a very important place in Chinese intellectual life, with more than 50,000 students of all grades among its 1,560,000 (1936) population. All the Chinese universities in the city were then closed, the premises in some cases being occupied by Japanese troops; only Yenching university (founded and supported by American missionary contributions) and two other institutions of higher learning in which there was a foreign interest found it possible to carry on work and many professors and scholars with nationalist views found it expedient to leave the city. There was a noteworthy influx of Japanese into Peking during 1938 and Japanese tourist agencies have been endeavouring to attract foreign visitors to the old Chinese capital. There were occasional guerrilla raids and skirmishes in the neighbourhood of the city, but no disturbances of order in Peking itself. In Jan. 1938 the "Provisional



Fox Photos]

A CITY GATEWAY, PEKING

Govt " set up in Peking under Japanese auspices introduced a new tariff under which a number of Japanese industries appeared to be the chief beneficiaries, the new rates being from 25 to 75 per cent below those in the Nationalist tariff It followed this up in March by the establishment of a Federal Reserve Bank, but efforts to secure the acceptance in North China of the notes issued by this bank instead of the Chinese Nationalist currency had met with only limited success up to the end of 1938. On May 26 the government issued a decree legalizing the drug traffic by imposing a "general-welfare tax" of twenty cents an ounce on raw opium sold in Peking drugshops. On Sept. 22 at a Peking ceremony attended by the Japanese army chiefs the administration set up at Nanking and the Peking Provisional Government were amalgamated, a Supreme Council was set up with Wang Keh-min as chairman.

PEMBA: *see* ZANZIBAR.

PENAL REFORM. The year 1938 will stand out as a milestone in the development of penal reform in Great Britain, for in November the Home Secretary, Sir Samuel Hoare, introduced the long-awaited Criminal Justice Bill

Probably the most important of the many drastic reforms contained in the Bill is that abolishing imprisonment as a punishment for juvenile offenders convicted of offences dealt with in courts of summary jurisdiction. The Bill proposes that, in place of being sent to prison for minor offences or in default of payment of fines, young offenders in large centres of population should attend "juvenile compulsory attendance centres" at times when they would ordinarily be at leisure, or be ordered to reside in "Howard Houses", public hostels where they will be under disciplinary control though they will go out to work as usual. There is provision for night periods of detention at a police-station (not more than three nights, which must not be successive) for those from 17 to 23 convicted of minor offences or non-payment of fines; and the extension to courts of summary jurisdiction of the power to pass sentences of Borstal training.

New institutions, to be called "remand centres", are to be provided for young offenders between the ages of 14 and 17 and 17 to 23 who are remanded or committed for trial, and at present are detained in prisons during this period; and also "state remand homes" for observation purposes by medical and other specialists who will assist the court in arriving at a decision regarding treatment in each individual case, particularly in the "problem cases" of children and young persons requiring special medical observation.

Following the recommendation of the departmental committee appointed to study the subject, the Bill proposes the abolition of corporal punishment for offenders of all ages, both with the cat-o'-nine-tails and with the birch, the only exceptions being cases of mutiny, or incitement to mutiny in a prison, or of gross personal violence to an officer in a prison by a prisoner. The terms "convict", "convict prison", "penal servitude", and "hard labour" are to be abolished. For some time there has been no distinction between the treatment of prisoners undergoing imprisonment with hard labour and those sentenced to penal servitude; now there will be no difference in their description, and prisons are to be classified according to the type of persons in them. Prison work to-day varies only in accordance with the capacity of the prisoners and the work available; it is, therefore, impracticable to assign to certain prisoners work that is harder than that assigned to others. With the disappearance of penal servitude goes the "ticket-of-leave" system, under which persons on licence had to keep in touch with the police; but criminals with bad records may be required, after release, to report to some society approved by the Home Secretary.

The bill empowers Courts of Assize and Quarter Sessions to pass two new types of sentences, the first for persons between the ages of 21 and 30, and the second for those over thirty years of age. For younger offenders, whose records and characters give hope that they can be made into responsible citizens, corrective training for periods of not less than two years and not more than four is provided, and for persons over thirty preventive detention for the same periods, which may, however, in certain cases, be extended to ten years.

A welcome improvement is that offenders will be allowed to submit themselves to a medical examination while on bail, instead of being remanded for this purpose: it is also proposed that courts of summary jurisdiction be enabled to make orders for the treatment of persons certifiable as insane. The term "criminal lunatic" is to be replaced by



Keystone]

THE FIRST OF THE U S FEDERAL REGIONAL PRISONS BUILT TO RELIEVE OVERCROWDING, COMPLETED AT TERMINAL ISLAND, LOS ANGELES, CALIFORNIA

" State mental patient ", and " criminal lunatic asylum " by " State mental hospital " ; the management of Broadmoor is to be transferred from the Home Office to the Board of Control, the Home Secretary retaining responsibility for the discharge of State mental patients.

On the administrative, as distinct from the legislative, side of penal reform, there has been throughout 1938 a steady development of earning schemes and physical training facilities for prisoners, with increased grants for books, sound films, etc., improvements in heating and lighting of cells, and better facilities for securing employment for discharged prisoners. (X.)

In the United States, Missouri is constructing a new auxiliary prison that is to be maintained for the purpose of preparing long-term convicts nearing their release for their return to the community. This represents an innovation in penal administration, and while its advantages have not yet been proved, it marks another definite trend towards scientific rehabilitative processes. Missouri has also built a new hospital, and has made provisions to house inmates in separate cells. Placing more than one man in a cell has always proved unwise and conducive to unhealthy conditions. Louisiana has adopted a system for segregating and classifying prisoners. Illinois and the Federal Government have taken cognizance of the vital necessity for providing adequate vocational education so as to prepare inmates for engaging in honest endeavours when they are released. Illinois has designed a new programme for that type of instruction. The Federal Government has appointed four industrial counsellors, stationed at four of the larger institutions which conduct extensive industrial operations. One of the most burdensome problems which penal officials had to face during 1938 was that of providing inmates with work. Idleness creates discontent and restlessness—but hardly any relief seems to be in sight for this vexing problem.

In France, it appears that certain definite steps have been taken toward the eventual abolishment of the penal colonies in French Guiana, sometimes referred to as Devil's Island. It has recently been decreed that no future first-offenders will be transported to Guiana, but will, instead, be confined in France where efforts will be made to rehabilitate them. If the present French programme of constructing additional prisons is adhered to, it can be expected, in the future, that Guiana will be entirely eliminated as a penal colony for the incarceration of all types of offenders. (L. E. L.)

PEPPER: *see* SPICES.

PERFUMERY: *see* SOAP, PERFUMERY, AND COSMETICS.

PERIM: *see* ADEN.

PERIODICALS: *see* MAGAZINES AND PERIODICALS.

PERLEY, SIR GEORGE (HALSEY), Canadian statesman, was born in Lebanon, U S., on Sept. 12, 1857, and died in Ottawa on Jan. 4, 1938. Having become naturalized in Canada, he represented the county of Argenteuil in the House of Commons in 1904, 1908, 1911, and from 1925 to his death. As a member of the Borden Cabinet of 1911 he frequently served as acting prime minister. A member of the first imperial war cabinet in 1917, he served as high commissioner in London from Oct. 1917 until March 1922. During this time he was one of Canada's delegates to the League of Nations, and after his return was a member of the Meighen and Bennett cabinets of 1926 and 1930. He became a member of the Imperial Privy Council in 1931 and in 1932 served as delegate to the Geneva Disarmament Conference. He was created K.C.M G. in 1915, and G C.M.G. in 1933

PERMANENT COURT OF INTERNATIONAL JUSTICE. M Erich (Finnish) was elected by the League on Sept. 26, 1938, to the judgeship vacant as a result of the death in 1937 of Hr A Hammarskjold.

Austria having disappeared and Germany not having renewed her signature, the number of States bound by the Optional Clause was reduced from 41 to 39

On Jan. 4, 1938, the Belgian and Spanish governments notified the Court that they had agreed to discontinue proceedings in the case concerning the disappearance and death, in Dec. 1936, of Baron Jacques de Borchgrave, a Belgian national resident in Madrid. In April the case was removed from the Court's list.

An application was filed by the Estonian government on Nov. 2, 1937, instituting proceedings against the Lithuanian government under the Optional Clause. The facts of the case were : shortly after the proclamation of its independence, Lithuania seized the Panevežys-Saldutiskis railway. The proprietors and concessionaries of the line, formerly a Russian joint-stock company, became an Estonian company as a result of the treaty of peace between Estonia and Russia in 1920 and of Estonian legislation. Estonia requested compensation for illegal seizure and operation. The Lithuanian government filed preliminary objections on March 15, 1938, based on the non-observance by the Estonian government of the rules of international law (*a*) " that a claim must be a national claim not only at the time of its presentation, but also at the time when injury was suffered ", and (*b*) " requiring the exhaustion of the remedies afforded by municipal law ". The Court made an Order, on June 30, 1938, joining the objections to the merits, on the ground that it could not adjudicate upon the objections without possessing more exact information or running the risk of prejudging questions appertaining to the merits.

On March 30, 1936, the Italian government filed an application, under the Optional Clause, requesting a declaration by the Court that certain measures taken by the Shereefian administration, French authorities in Morocco, and the French government, as protecting State, in connexion with the prospecting for and working of phosphates in Morocco, were inconsistent with the international obligations of Morocco and France under the Act of Algeciras, 1906, and the Franco-German Convention, 1911, and should be annulled ; alternatively, that the decision of the Mines Department of Jan. 8, 1925, was inconsistent with the international obligations of Morocco and France to respect

the rights acquired by Italian nationals. The Act of Algeciras provided that the conditions for the granting of concessions and for the working of mines in Morocco should be determined by Shereefian firman By the provisions of the same Act and of the Franco-German Convention of 1911 concerning Morocco, the regulations made were to respect the principle of the "open door". In 1920 two dahirs were promulgated, one reserving to the Maghzen the right to prospect for and to work phosphates, and the other establishing a State monopoly In 1921 an Italian citizen, Signor Tassara, applied to the Mines Department for the recognition of his rights in respect of licences acquired by him from French citizens to whom they had been issued in 1918 and 1919, before the promulgation of the dahirs His application was rejected by the Mines Department on Jan 8, 1925, and attempts by his successors were equally unsuccessful in 1931–33 Judgment was delivered by the Court on June 14, 1938, upholding the French objection that the Italian application under the Optional Clause could not be entertained, in view of the French government's reservation at the time of its ratification on April 25, 1931, that it accepted the compulsory jurisdiction of the Court "in any disputes which may arise after the ratification of the present declaration with regard to situations or facts *subsequent to such ratification*". The Court held that the Italian argument that these acts, taken in conjunction with earlier acts, constitute, as a whole, a single, continuing, and progressive illegal act which was not fully accomplished until after the crucial date, could not be upheld, as the essential acts complained of, *i.e* the dahirs of 1920 and the decision of 1925, took place before April 1931

At the end of 1938 two further cases were pending. The *Electricity Company of Sofia and Bulgaria Case*, filed by Belgium against Bulgaria in Jan 1938, and the *Société Commerciale de Belgique Case*, filed by Belgium against Greece in May 1938. (S. A. He.)

PERU, a republic on the West Coast of South America; language, Spanish; president, Gen Oscar R. Benavides. Area 532,185 sq. m., including approximately 100,000 sq m. in dispute with Ecuador. No official census of the entire country has been taken since 1876; a census planned and begun in 1937, but postponed, was under way in 1938. The official estimate of population in 1938 was 6,600,000. Principal cities: Lima, the capital, 352,000; Callao, 102,000, Arequipa, 56,000; Cuzco, 35,000.

Internally, the year 1938 was marked by political quietude, except for an abortive revolt in October. In January work was begun on the construction of a new port at Matarani on the southern coast to replace Mollendo as a Pacific rail terminus. Port improvements at Callao, including a new graving dock, were completed in July, making that port one of the best equipped on the west coast of South America.

Peruvian foreign relations in 1938 were featured by continued impasse in the boundary dispute negotiations with Ecuador, conducted at Washington since 1936. After several disturbances along the border, the negotiations were broken off in October, with strained relations continuing through the year. Ecuador, however, attended the Pan-American Conference (*q v.*) at Lima.

Education. Peru has 4,697 schools (1937 enrolment: 471,304), as well as technical schools and several universities, notably the University of San Marcos at Lima.

Finance. The monetary unit is the sol (value: approx. 10½*d*).

Trade and Communications. Peru has good steamship and excellent air transport service to foreign countries, supplemented by rail connexions with Bolivia and northern Chile. Interior air service is well developed. The railway system extends 2,600 miles The highway system, already over 13,000 miles in length, is being rapidly expanded under the "Three-Year Plan of 1936". During 1938 considerable progress was made with the Pan-American Highway, with additional sections opened for traffic. Completion of the last link of the 746-mile Lima–Arequipa section was expected by Jan 1939 Of especial significance was the progress on a highway over the 16,000-ft Continental Divide. Its completion, promised by the end of 1939, would connect Lima with Pucallpa in the Amazon basin, and obviate the present necessity of communication with that region by way of the Panama canal, Atlantic ocean, and Amazon river. Road construction in 1938 cost over 25 million soles, and employed more than 20,000 men.



Peruvian Corporation

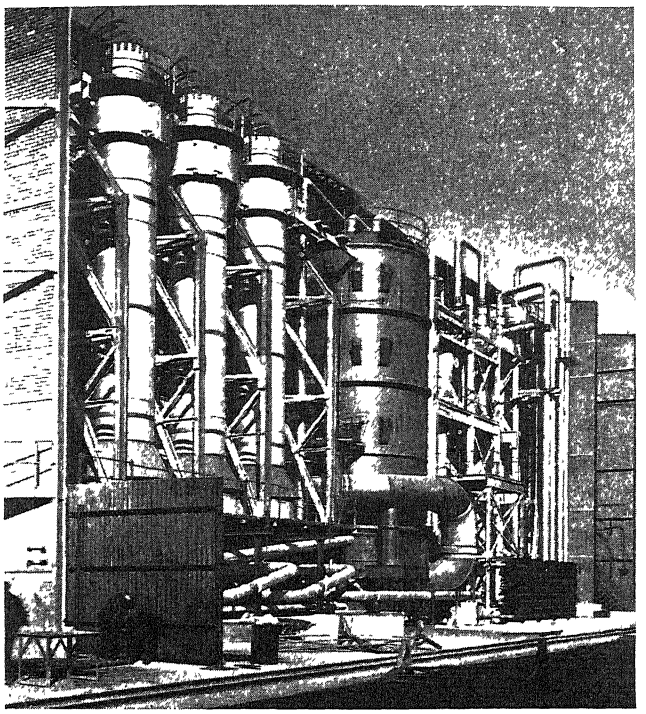
THE CARRIÓN BRIDGE, OPENED IN 1938 ON THE CENTRAL RAILWAY OF PERU AND NAMED AFTER CARRIÓN, WHO DIED THROUGH TESTING ON HIMSELF AN INJECTION AGAINST THE VERRUGAS DISEASE

In 1937 Peru's imports (mainly foodstuffs and manufactured goods) totalled 235,205,523 soles, a 17 per cent increase over 1936 (United States, 35 per cent; Germany, 25 per cent; Great Britain, 10 per cent); exports (petroleum, cotton, sugar, metals) were 365,440,446 soles, (Great Britain, 23 per cent; United States, 22 per cent; Germany, 14 per cent), an 8 per cent increase. In the first eight months of 1938, however, imports rose 17 per cent to 169,051,271 soles, while exports dropped 16 per cent to 203,827,511 soles.

Agriculture, Minerals, and Manufactures. Peruvian industry is largely in foreign hands, with a United States investment of $96,052,000. United States interests dominate in mines and smelting, and control 24 per cent of sugar production; British control 80 per cent of the oil output (1938 estimated production; 16,045,000 barrels); Japanese are prominent in cotton. (L. W. Be.)

PESCADORES: *see* JAPAN.

PETROL. The world's consumption of petrol has more than doubled in each decade since 1890, and preliminary estimates for 1938 point to a continued increase. Over 69 per cent of the total production is consumed in the United States. Europe consumes twenty per cent, America (other than the U.S.A.) five per cent, and Australasia 2½ per cent, the balance being almost equally divided between Asia and Africa. The British Empire produces only one-fiftieth of the world's petrol, but about a fifth of it is under British control. Nearly half of the United Kingdom imports in 1938 came from the Dutch West Indies, and only six per



Imperial Chemical Industries, Ltd]
PETROL FROM COAL "CONVERTERS" AT BILLINGHAM, HIGH-PRESSURE VESSELS WHERE THE COAL IS HYDROGENATED

cent from British countries, the total imports being about five per cent more than in the previous year. Fewer cars were built, but there were five per cent more petrol-driven vehicles on the roads, and motor spirit consumption went up by three per cent.

The Falmouth committee appointed by the Imperial Defence committee to inquire into the production of oil from coal urged the need for increased home production of spirit, and estimated that the gas industry could supply twenty million gallons more motor benzole per annum if modern recovery processes were generally practised, and the report of the secretary for mines later in the year showed that on the basis of coal carbonized, benzole was scrubbed from 51·7 per cent of the gas made against 47·3 in the previous year. Just over 62 million gallons of benzole were produced in Great Britain in 1937, of which 73 per cent came from coke ovens and the remainder from gasworks. Organizations to control and encourage the production of benzole were set up in the principal producing countries in Europe, but in Great Britain and Germany it is still in the hands of the producers.

The hydrogenation process operated by Imperial Chemical Industries, Ltd., at Billingham for the production of petrol from coal, creosote oil, and low temperature tar produced 35 million gallons in 1937 against 33·3 million gallons in the previous year, and the process was developed in Japan, Italy, France, and other countries, a similar scheme being contemplated in South Africa.

In the interests of national defence the British Ministry of Transport revised the restrictions on ocean-going petrol tankers in the Thames. Hitherto such vessels were not allowed to travel farther Londonwards than Thames Haven, but they are now permitted to proceed as far as the great storage depots at Purfleet. (A. C. Cr.)

In the United States in spite of the economic recession, the American motorist and other agencies of petrol consumption used almost as much fuel in 1938 as they did in the record year of 1937 such decline as there was being only fractional. The total demand in 1937 was 519,352,000 bbls. which compared with 481,606,000 bbls. in 1936. The number of motor-cars on the roads to-day is over 30,000,000, and the future outlook is for ever-rising demand Moreover, air traffic, now only at the stage of road transport 25 years ago, is expected to advance by leaps and bounds, creating a new, heavy demand upon petroleum resources. More than 750,000 motor-boats ply coastal and inland waterways, dependent upon petrol for fuel, while the stationary petrol engine must have its annual quota.

Possibly the only major factor, except economic factors, tending to relieve the increasing demand for petrol is the growing use of the Diesel engine, which uses Diesel oil as fuel The principal expansion of Diesel-engine use has been in the marine field, but it is also spreading rapidly in general industry and in powering buses, tractors, and lorries There is, however, no immediate prospect that the Diesel engine will replace the petrol engine in motor-cars and aeroplanes, and it is in connexion with the consumption by these agencies that revolutionary development of new motor fuels is now taking place.

The trend is towards higher octane values in petrol. Not only must more motor fuel be available, but it must be of a vastly higher quality About ten per cent of to-day's motor-cars are designed to run on 78-octane or higher petrol, sixty per cent require seventy-octane or less, and thirty per cent will not knock on 65-octane petrol. However, it is not unreasonable to predict that the commonly available petrol of the future will approach, if it will not reach, 100-octane rating (*See* also Chemistry: *Petrol by Polymerization*; Petroleum) (L. M. F.)

PETROLEUM. With the world accelerating its demand for petroleum products, it would seem an anomaly to record a decline in world petroleum production for 1938. Indications, however, point to a slight decrease from the record figure of 2,041,038,000 bbls set in 1937. The principal factors contributing to this statistical retrogression were the adverse economic situation in the United States, causing a slowing up of consumption, and the confiscation, under an expropriation decree, of the private petroleum industry in Mexico in March 1938, resulting in a sharp decline of Mexican oil production for the balance of the year.

As against these politico-economic factors in the western hemisphere, which worked for curtailment of production, there continues a decided trend of rising consumption in countries (excepting the United States), and the decline in the United States is only fractional against a high record set in 1937. The United States, largely because of mass ownership of motor-cars, has long been the greatest consumer of petroleum products What is happening now, particularly in Europe, is that the rest of the world is catching up to the United States, greatly increasing its proportion of total world consumption. Since 1930, consumption of petroleum and petroleum products has risen, roundly, forty per cent, but outside the United States the increase has been nearly sixty per cent. More motor-cars, extension of roads, increased industrialization and armament programmes point to even more sharply increased demand in the immediate future. In Europe alone consumption requirements are double what they were in 1932.

This is reflected in increasing activity in exploration, well drilling, and refinery extension in all quarters of the globe, with the emphasis on promising territories strategically situated so as to promise petroleum supplies to countries of Europe dependent on outside sources, in case of war.



Fox Photos]

A REFINERY AT LINDEN, NEW JERSEY, BURNING AFTER AN EXPLOSION HAD SET FIRE TO FOUR MILLION GALLONS OF OIL AND PETROL

Obviously, for some time to come, Europe will have to look to North and South America for supplying the bulk of its increased consumption, but in the meantime the great potential oil sources in the Near East and Middle East are receiving greater play. Iran and 'Iraq production is still kept to a fractional part of potential, and from existing wells could be greatly increased, given transportation and marketing outlets. The most spectacular recent development in the Near East is the rise of Bahrein, a small island on the western gulf side of the Gulf of Iran, still in its early production stages. In 1937 it produced 7,762,000 bbls., and probably reached nearly 12,000,000 bbls. in 1938 Successful tests in Saudi Arabia indicate a possibility of this part of Arabia being another or greater 'Iraq in petroleum production. The first commercial production was brought in during 1938 in the Burgan area of the sultanate of Kuwait, at the head of the Persian gulf, near the mouth of the Euphrates and bordering 'Iraq. This may prove important. In northern and eastern Iran and in Afghanistan, exploration work is going on.

Great Britain and the British Empire. Further efforts to develop home petroleum sources have been made in England. The Anglo-American Oil Co., Ltd., having previously drilled a 4,000-ft. dry hole in the south of England, brought in a discovery well at Dalkeith, Scotland, which tested for a combined flow of 5,000,000 cu. ft. of natural gas, at 700 lb. per square inch, from four sands from 2,000 to 2,152 ft. Over a five-day period, the oil sands at 1,750 ft. showed a flow of from eight to ten bbls. daily. The well was shut down to await special pumping equipment, and another test well started close by. There was increased exploratory work in New Zealand following the new Petroleum Act of 1937. Trinidad production and operations showed increases. In 1937, Trinidad produced 15,503,000 bbls. compared with 9,419,000 bbls. in 1930. Alberta also emerged as an oil-producing area, 1938 production being estimated at 7,000,000 bbls., compared with 1,320,442 in 1936.

U.S.S.R. Russia, which in 1932 sold 6,000,000 tons of petroleum products in the foreign market, probably aggregated outside sales of only 1,000,000 tons in 1938, due to increasing home demand and the failure of the Soviet Republic to find new oil supplies. Official production figures show a total for the first nine months of 1938 of 155,592,000 bbls. compared with 150,733,000 bbls for the same period of 1937, and on Sept 15, the Soviet Commissar for Heavy Industries issued a decree warning that, because drilling was lagging behind expectations, fulfilment of the 1938 plan was jeopardized as well as preparation for the 1939 quota.

Europe. Rumanian oil, which at one time was sold all over Europe, is increasingly confined to German and Italian markets. Meantime, Germany continues to expand her manufacture of petrol from coal and, according to general understanding, is producing about sixty per cent of her requirements. She expects by 1942 to have facilities sufficient to supply all her requirements However, with the increased use of the motor-car, there is some doubt whether that goal will be reached, and certainly petroleum sources are vital to her in the event of a major conflict. At the time of the Czechoslovakian crisis, Czechoslovakia, which has a small petroleum production, was proposing to build new coal-liquefying plants in the province of Slovakia for older ones situated near the German and Polish frontiers.

Mexico. March 18, 1938, President Cardenas of Mexico issued a decree expropriating foreign oil properties in Mexico following prolonged labour dispute and litigation. Chiefly involved were American, British, and Dutch interests, which had developed the Mexican oil industry since the beginning of the century. Promises to recompense the companies for the confiscation have not materialized. Diplomatic representations have been exchanged with Mexico by all countries involved, and early in the proceedings Great Britain withdrew her minister to Mexico.

Mexico's export trade in petroleum in former years averaged about 20,000,000 bbls. annually. From March 19 to Oct. 6, despite the strenuous efforts of the Government to find outlets, shipments were less than 6,000,000 bbls., a rate slightly under 900,000 bbls. monthly, or something less than half of normal. Forty per cent of the shipments were to Germany in exchange for machinery and other articles. Dumping of Mexican oil at low prices on the American market is due to come up for legislative action in the United States, and the British Empire has a boycott against such oil, while recent court decisions have made its sale in France, Belgium, and the Netherlands almost impossible. Meantime, the Mexican Government is out of pocket the income it received from oil taxation, amounting to about 30,000,000 pesos annually, and there is no doubt that the Mexican oil workers are considerably worse off in regard to wages and social benefits than they were prior to the expropriation decree. Court action in Mexico for the return of their properties instituted by the foreign oil interests continues as a matter of record, but any possibility of the restitution of their properties or reimbursement lies in the field of international law and diplomacy.

United States. While the interruption to Mexican oil supply meant a heavier drain on South American fields, particularly Venezuela, and also on the United States to furnish foreign requirements, production of petroleum in the United States in 1938 showed a decrease of some 40,000,000 bbls. to 50,000,000 bbls. compared with the high record of 1,279,160,000 bbls. in 1937. During the year, also as reflecting the effect of the business and economic recession on consumption and stocks of petroleum products, crude oil prices were reduced. Complicating the situation was the development of a new oil-field in southern Illinois into major proportions, and the fact that the state of Illinois, although a member of the Inter-state Oil Compact under

which the oil-producing states attempt to restrict oil production to consumption requirements, had passed no conservation law and its under-parity oil, together with that from other states, was thrown on the market

There was a decline in drilling activity for the year, and the effort to keep down production to within reasonable consumption requirements was noticeable as the industry entered 1939, with the business and economic situation still uncertain To further this objective, renewal of the Federal Connally Act, preventing inter-state shipment of oil illegally produced, was advocated, as well as state and Federal approval of the continuance of the Inter-state Oil Compact, in existence the last three years Also advocated was the full and complete co-operation of all producing states not already members or without a conservation law, particularly the states of Illinois, Louisiana, Arkansas, Michigan, and California.

Refining Processes. Continued significant development of refining processes has been shown. Catalysis and synthesis are the instruments bringing about most notable results Attention is being concentrated on the more economical production of high-octane fuels, on the mixing of hydrocarbons of varying characteristics to provide more durable and efficient lubricants, on hydrogenation, polymerization, isomerization, and other methods of synthesization for obtaining, not only superior products for established uses, but also important by-products in the chemical field.

Of outstanding interest, in that they are said to have possibilities of revolutionary nature to the refining industry, are the recently announced Houdry catalytic processes. Developed by Eugene J. Houdry, who went to the United States in 1930 at the invitation of the Vacuum Oil Co , Inc., and including the work of others associated with the Houdry Process Corp., the Vacuum Oil Co , and the Sun Oil Co., the processes were initially described at the Nov. 1938 annual meeting of the American Petroleum Institute. Results from units in operation showing an exceptionally high yield of high-octane petrol were made public. Such results carry the promise of the immediate availability of larger quantities of aviation fuel and also would make possible the designing of more efficient motor engines for use of such fuel. Moreover, it is claimed for the processes that they give the petroleum industry a new and profitable means to achieve a better economic balance between petrol, furnace oil, fuel oil, and crude oil requirements, enabling it to adjust refining operations to seasonable variations in demand.

While it is too early to say what the effect of these processes will be, they indicate the greatest change in the refining industry since the cracking process first came into use. New Houdry units, to cost $35 millions, were being built by the Vacuum and Sun Companies, and will be in operation by the middle of 1939. It is assumed that the processes will be licensed to the petroleum industry in general. Other promising features of the processes stated are ability to assist the industry in meeting the ever-increasing demand for distillate products and at the same time conserve crude oil reserves. The ability of the process to refine economically any type of crude would appear to make available for use many crudes not now suitable for conventional refinery operations, and thus again to conserve crude oil reserves. (L. M. F.)

PHARMACY AND PHARMACEUTICAL PRODUCTS. Increased control of shop pharmacy, made possible by the Pharmacy and Poisons Act, 1933, has been evident during the past year, and nearly every pharmacy in England, Scotland, and Wales was inspected. Registrations with the Pharmaceutical Society of Great Britain rose to over 24,000. Legal proceedings were taken against a few chemists who, contrary to the provisions of the Act, had supplied strychnine for the destruction of vermin and against unqualified persons who had sold poisons in Part I of the Poisons List From Jan 1, 1939, benzedrine (the "pep" drug) and sulphanilamide become statutory poisons, the latter drug being obtainable only on prescription.

Towards the end of the year the Pharmaceutical Society held a census of retail pharmaceutical business with the objects of determining the rate at which chemists' shops are opened , the proportion of turnover derived from dispensing, proprietary medicines, etc. ; the profits of each business ; and the proportions of pharmacies to population The figures should show whether limitation of pharmacies on a population basis is desirable. There is evidence that the proportion of proprietary medicines prescribed by doctors is increasing In Britain the figure has been put at thirty per cent, and in the United States of America at twenty-five per cent of all prescriptions A movement was started in November by a small group of retailers to establish a voluntary chain of privately-owned shops with the object of competing more effectively with the large multiple concerns

A new British Pharmacopœia is due to be published in 1940 Where possible its descriptions of drugs and assay processes will be uniform with those in the United States Pharmacopœia. A new French Pharmacopœia has been issued, the first since 1908. Research work has been done on methods of sterilizing solutions of heat-labile substances, and the opinion is gaining ground that the presence of an antiseptic such as *p*-chloro-*m*-cresol, with heating to 100° C., is adequate. Improved methods of preparing vegetable extracts may result from a report by H. Berry (see *Pharmaceutical Journal*, 1938, cxli, 262) that samples of cascara sagrada extract contain too much insoluble matter due to overheating in their manufacture. (W. K. F.)

PHILADELPHIA, third largest city of the United States (pop. 1,972,700, census estimate 1933), conducted in 1938 a fitting celebration of the 300th anniversary of the arrival of the Swedes in America. Ceremonies and processions were held intermittently between April 8 and June 28, when the Crown Prince of Sweden dedicated the American-Swedish Historical Museum, formerly the John Morton Memorial.

Several strikes interfered with the public service during 1938. From Aug. 15 to Oct. 16 a taxi strike kept all cabs off the streets ; from Oct. 6 to 14, city garbage and rubbish collectors were on strike.

Work advanced to near completion of the Municipal (S. Davis Wilson) airport at Hog island, and in September, the southern extension of the Broad Street subway was put into operation.

PHILATELY. The year 1938 was a fruitful one, the Standard catalogue listing the production of 2,089 major varieties of postage stamps throughout the world. World politics are reflected in the stamp issues : two new governments appeared and one very old one disappeared. The newcomers are Italian East Africa—which includes Eritrea and Abyssinia and the Hatay, formerly the Sanjak of Alexandretta. The disappearing government is Austria.

The Nationalist government of Spain is prolific in stamps, and the Republican special issues have included one for a "submarine post" between Barcelona and Valencia. Britain, its Dominions and colonies have seen the issue

in rapid succession of the new King George VI permanent issues The King Edward VIII issue represented only four low denominations and the 1937 Coronation stamps were also limited in face values, but the new issues represent in many instances the full range of denominations up to £1. In the United States, the Constitution Sesquicentenary produced another stamp, as did the Northwest Territory Centenary. The other event justifying commemoration was the Swedish-Finnish Tercentenary, celebrated in Delaware For this, Sweden also issued a series of five stamps and Finland brought out one.

Since 1922 there has been no new general issue of United States stamps, and in 1938 the Post Office Department determined to replace the old, somewhat haphazard, general issue with a planned "presidential series" For the first time, a competition was held to select a design, and Miss Elaine Rawlinson of New York won first prize. Her design was the basis of the new series. Previously, certain presidents have been used consecutively—Washington has appeared on every issue since 1847, the first; and Lincoln has been constant since 1866—while others, some of them important in American history, have been omitted. The new issue portrays each of the presidents, in order.

Taking advantage of the new issue several new values, necessitated by newer rates, have been added. The fractional rates, for printed matter and small parcels, have been used for collateral pictures · the ½c portrays Franklin, Colonial postmaster-general; the 1½c. bears the likeness of Martha Washington; the 4½c. depicts the White House at Washington. Since the law prohibits the portraits of living Americans, two presidents are not shown.

Perhaps the most interesting development in philately in 1938 was the liberalizing of the United States law concerning illustrations of U.S. stamps. The new albums and catalogues portray the stamps, the only legal requirement being that the pictures be three-quarter dimension or smaller, or one and one-half times as large or larger.

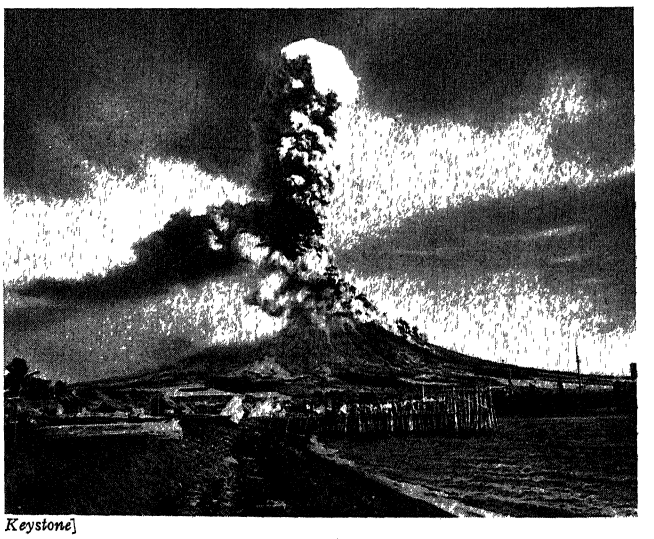
During 1938 the Swedish Philatelic Society condemned "speculative issues"—those primarily intended for collectors rather than postage—emphatically. The hope is that the refusal of the catalogues to include such material in their listings will keep collectors from purchasing them, and thus reduce the income from such so that offending governments will discontinue the practice. Experience, however, shows that such attempts in the past usually result in the issues becoming scarcer as time passes, and often quite desirable. The indignation aroused by open discussion of such debatable practices as carried on by some governments may well bring their issues into deserved disrepute, and thus automatically bring about the change.

Literature. For a hobby, stamp collecting commands the greatest array of standard and evanescent literature in the world. Every country boasts a philatelic literature. During 1938, the outstanding works on stamps were produced by the United States and Brazil. The former gave us the monumental *The One-Cent U.S. Stamp of 1851–57* by Stanley B. Ashbrook, who has already received the Crawford medal of the Royal Philatelic Society, London, for his previous work on the 10c. stamp of the same period. Brazil's contribution was the *Carimbos do Imperio Brasileiro*, a superb compilation of the postal markings of Brazil, Empire period, by Paulo Ayres. The text is tri-lingual: French, English, and Portuguese.

Obituary. The last of the early giants of philatelic literature, "The Grand Old Man of Philately", John N. Luff, died on Aug. 23, 1938. His masterpiece, *The Stamps of the United States*, first published serially in 1896–98 and later in book form, has remained the standard general work on those issues. Two years before his death, Mr. Luff had arranged for publication of a revised edition, from his original notes and constant additions, to be edited by his younger associates, and the first section had already appeared when he passed away.

PHILIPPINES, COMMONWEALTH OF THE. The status of the Philippine Islands is that of an unincorporated territory of the United States until July 4, 1946, under the constitution provided in the Tydings-McDuffie Independence Act, and the group is governed by a single-chamber national assembly. During the period of the commonwealth, all legislation affecting currency, coinage, imports, exports, and immigration requires approval by the President of the United States, the U.S. is in control of foreign affairs, and all decisions of local courts are subject to review by U.S. Supreme Court. Area, approximately 114,400 sq. m.; population (estimate), over 14,000,000; basic stock, Malayan, but many blends and mixtures exist. Chinese number about 75,000, and Japanese perhaps 20,000 or more, there are comparatively few Americans and Europeans Tagalog, despite protests from other racial groups, has been declared the national language. Capital, Manila, U.S. high commissioner, Paul V. McNutt; president, Manuel Quezon

President Quezon's request (Jan. 1, 1938) for early independence was considered by many as a gesture, and it has been suggested that he and many others (because of possible Japanese aggression) now prefer a permanent dominion status after 1946. In November it was reported that President Roosevelt had approved the report of the Filipino-American committee, adopted after nineteen months of investigations, that final independence be granted to the islands on July 4, 1946, but that mutually beneficial economic regulations should continue for fifteen years from that date. President Quezon also approved the report. New elections for the assembly were held on Nov. 8 and resulted in favour of the Nationalist Party. Labour troubles, Moro outbreaks, and fires were frequent during the year, but the Sakdalistas (advocates of immediate and forcible independence) gave comparatively little apprehension. The leader of that party has returned from Japan and has become a Nationalist. Japanese economic penetration is feared in some quarters Japan has made inroads in the timber, abaca



Keystone]
MAYON VOLCANO, NEAR LEGASPI, PHILIPPINE ISLANDS, IN ERUPTION, SEPT. 2, 1938, AFTER BEING DORMANT TEN YEARS

(manila hemp), and other industries and has entered largely into the cotton goods trade A Japanese concern has installed 400 Shirano non-automatic looms in the Philippines and has commenced producing cloth woven from grey, bleached, and dyed yarns imported from Japan A native merchant marine is urged for the islands , already twelve merchant ships belonging to Filipino concerns are flying the Philippine flag.

Education and Religion. Roman Catholicism predominates among the Filipinos properly so-called. The Moros (over 400,000) are Mohammedans. Public school enrolment reached over 1,000,000 in July 1937, children in private schools number about 100,000, and enrolment in the University of the Philippines is in excess of 6,000. Literacy is about 33 per cent.

Defence. The Army (except for a small regular native force of 20,000, in which the constabulary is included) is conscriptive. It is planned to train about 40,000 men annually as a reserve force. No plans have been made for a Navy.

Finance. The standard of value is the peso (equivalent to 50 cents U.S). The cash surplus on Jan. 1, 1938, was 90,000,000 pesos. Estimated budget figures for 1938 were · receipts, 80,445,700 pesos ; expenditures, 78,486,744 pesos. The estimated figures for 1939 were · receipts, 79,309,803 pesos ; expenditures, 77,976,379 pesos.

Trade and Communication. Exports and imports for 1937 were 304,634,562 and 218,051,490 pesos respectively , and for the first five months of 1938, 113,340,781 and 134,219,859 pesos—a decrease of about fifteen per cent in imports and an increase of about fifty per cent in exports over the like period of 1937. Principal exports are sugar, abaca, coco-nut products, tobacco products, timber, iron and chrome ore. Principal imports are cotton goods, iron and steel, machinery and parts, tobacco products, mineral oils, automobiles and automobile parts, wheat flour, chemicals and drugs, and dairy products. The Philippine Railroad Company, which operated in Panay under a twenty-year government guarantee, has been declared bankrupt. On Jan. 1, 1937, roads of the first, second, and third class were respectively 5,944, 3,210, and 1,298 miles. Air service continues, although there have been several accidents in or near the islands, and an aeroplane basin and national airport has been established in Manila harbour.

Natural Resources. Forest and agricultural products, minerals (especially gold, and to a lesser extent iron and chrome), are among the principal natural resources. A new record was made in June 1938 in the production of gold, which was valued at 5,592,143 pesos (production for the first time exceeded 5,000,000 pesos in March 1938). Production for the first six months of 1938 was valued at 31,189,216 pesos, as against 24,626,107 pesos in the same period of 1937.

PHILOSOPHY. The output of important philosophical works in 1938 was perhaps not quite up to the average, but this does not signify a decline in philosophical interest. While the general international congresses of philosophy are only held once every three or four years, the last being in 1937, the past year has seen two international philosophical conferences on a smaller scale. The International Congress for the Unity of Science, held in England at Cambridge in July, which represented on the whole the positivist school of philosophers, discussed topics connected with the philosophy of science and the nature of an ideal scientific language. International philosophical discussions were also held in September at Amersfoort in Holland, under the auspices of the *Institut International de Collaboration Philosophique* The latter body was founded as a result of the international congress in 1937 in order to publish a fairly exhaustive international bibliography for philosophy every six months, to supply information to individuals of the work being done in other countries on any particular subject of research in which they are interested, and to bring philosophers of different nationalities into touch with one another The Comité Directeur includes representatives of France, Germany, Great Britain, Italy, the United States, and many other countries, and the bibliography already comes near to covering the philosophical literature of every country

The philosophical school which attracts most notice continues to be the analytic, positivist school, one branch of which is inspired by Wittgenstein, and another by men like Carnap and Reichenbach. It only commands the actual allegiance of a moderately small minority of philosophers, and there are considerable differences of opinion between different members, but it has sufficient unity to be called one school and represents the best known and strongest current of opinion in philosophy at the moment The most noteworthy book of the year in connexion with the movement is Schlick's *Philosophische Abhandlungen*, edited posthumously by Waismann (which includes essays in English and French as well as in German). The work treats meaningful statements as divisible into two classes . (1) those which could conceivably be verified by sense-experience, and are therefore empirical and synthetic, (2) those which are derivable from linguistic conventions and are therefore *a priori*, not because they assert necessary objective facts, but because to contradict them would be to use words in a way which has no sense according to the rules of language. This naturally leads to the denial of metaphysics if this is understood as a set of propositions giving new facts beyond those included in any special science, not because such metaphysics is false, but because it is meaningless, and the elimination of all the traditional philosophical problems as due to misunderstandings concerning the use of language. This is typical of the school, but its members are now tending to defend the " verification principle ", not as a true proposition, but as a methodological device ; *i.e.* they do not say that a statement is meaningless unless it is verifiable (or " falsifiable ") in one of the two ways above mentioned, but they tell you to ask of all statements how they can be verified as a necessary preliminary to determining their nature (*vide* Wisdom's article in *Mind*, Oct. 1938). They still think, however, that the use of this method will have the effect of eliminating the tendency to ask metaphysical questions in the old sense. Whether they have solved the philosophical problems which they claim to solve or not, this school of philosophers have thrown valuable light on the use of language and its bearing on philosophical problems and on the difference between different kinds of statement, and have the merit of having worked out an empiricism more consistent than that of Hume or Mill. Other works published in 1938 by members of this school are H. Reichenbach's *Experience and Prediction*, in which he works out a theory of probability in terms of relative frequencies and defends a Humean account of induction, and W. H. Watson's *Understanding Physics*, in which the method inspired by Wittgenstein is applied to this science.

While the great majority of philosophers still do not think that the traditional problems can be settled in any such way, there is no well-marked single school in opposition to those mentioned. Though there are a great many philo-

sophers who believe that propositions about physical objects are to be interpreted in terms of human experience or sense-data, idealism, in the sense in which it was held in the nineteenth century, has become very rare, except among the older men Croce has published a book on history and its function in the life of the spirit, *La Storia come pensiero e come azione*, and Collingwood of Oxford has just published a book (*The Principles of Art*) expanding and defending the Crocean view of art as the expression of emotion Another important book published in England is Broad's *Examination of McTaggart's Philosophy* (2nd vol) Broad gives a very thorough and damaging dissection of the most ingenious arguments of McTaggart, but till speculative philosophy comes into fashion again, the book will be consulted more frequently for Broad's own views on topics like the self and time A direct theory of perception is defended by Dawes Hicks in *Critical Realism* Stocks in *Time, Cause, and Eternity* urges a return to the Aristotelian conception of formal cause, and restates the claim that our experience points beyond time to a super-temporal reality Whitehead has also published a new book, *Modes of Thought*. Among books giving a philosophical defence of theism, Bowman's *Studies in the Philosophy of Religion* and De Burgh's *From Morality to Religion* deserve mention In the field of history of philosophy there has been published for the first time Hume's own *Abstract of the Treatise*, which has only recently been discovered.

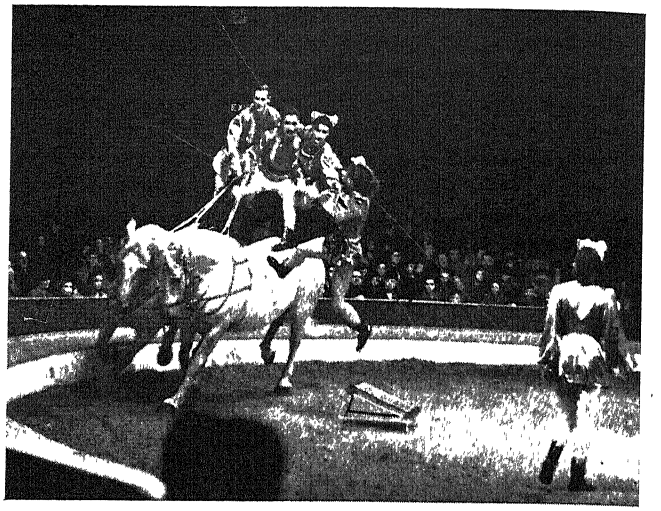
Philosophical works from America include Dewey, *The Theory of Inquiry*, and Santayana, *The Realm of Truth*; from Germany, Jaspers, *Existenzphilosophie*, and Hartmann, *Möglichkeit und Wirklichkeit*; from France, Bachelard, *La Formation de l'Esprit Scientifique*, Parrier, *Le Nombre*, Robin, *La Morale Antique*, and Vignaux, *La Pensée du Moyen Age*.

Philosophy in England has sustained a great loss during the year through the death of S. Alexander. (A. C. E.)

PHOSPHATES. Mineral phosphates, chiefly phosphate rock, a phosphate of calcium, are basic fertilizer material, and as such support an extensive producing industry. A world production of 11,760,000 metric tons in 1930 declined to 6,678,000 tons in 1932, and recovered to 11,840,000 tons in 1937. The United States is the leading producer, with 34 per cent of the total, followed by Tunis 16 per cent, the Soviet Union 13 per cent, French Morocco 13 per cent, Ocean and Nauru islands 9 per cent, Algeria 5 per cent, and Egypt 4 per cent. These seven countries account for 94 per cent of the total, and the remaining 6 per cent is scattered among about thirty others. The general producing area in northern Africa, including Tunis, Morocco, and Algeria, has not made any very material recovery from the depression drop. Although both Egypt and Ocean and Nauru islands suffered only a minor decline, and have recovered to a level well above that of 1930, the Russian output is the only producer which has shown an exceptional growth, increasing steadily from 200,000 tons in 1930 to 1,598,000 tons in 1937. The United States output of 3,989,000 tons in 1930 dropped to 1,734,000 tons in 1932, and rose to 4,018,000 tons in 1936, about one-quarter of which was exported.

See also FERTILIZERS.

PHOTOGRAPHY. The activity in photography shown in 1937 was continued through 1938. All branches were affected, largely through the use of new types of film. The position held by colour photography was substantially extended, and it now takes rank as one of the major branches of photography. In Britain, the photographic



TAKEN WITH A LEICA. SUMMAR 5-CM LENS AT F/2, 1/200TH SECOND

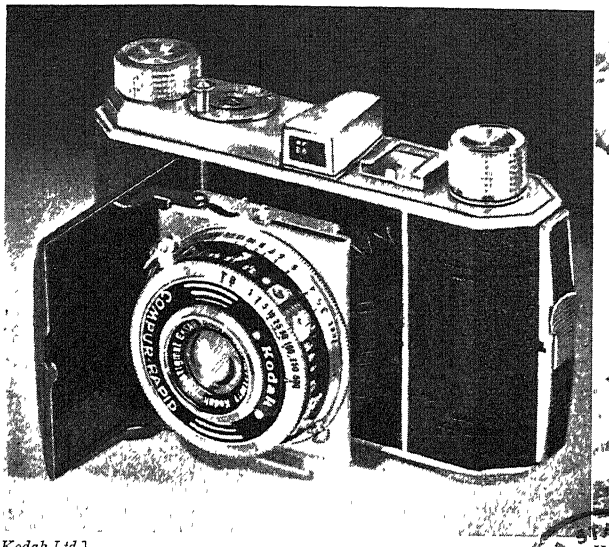
amateur has always been much interested in performing his photographic manipulations himself. In the United States, it is only in the last few years that the possibilities of photography as a hobby have been seriously followed by a fair proportion of camera users, but the amateur's interest is growing rapidly Great activity in photographic research produced important contributions to the knowledge of the fundamental photographic process and of the nature of development More photographs were used for advertising, and magazine and newspaper illustration, than in any previous year, with an increasing use of colour, which in some publications began to predominate over black-and-white. In this, the important part played by the photo-engraver must be recognized.

Cinema Photography. Apart from the more widespread use of colour photography, the most notable step was the rapid acceptance of the new types of emulsion in the cinema industry The new fast fine-grain films found ready application in the studios, and films of extreme speed permitted the news-reel photographer to make good negatives under extremely poor lighting conditions. Fully exposed films were commonly made on normally lighted streets, sports arenas, and so forth. Further demonstrations were given of stereoscopic colour cinema projection using polarizing



Purma Cameras, Ltd.]

THE "PURMA SPECIAL" MINIATURE CAMERA, HAVING AN F/6·3 ANASTIGMATIC LENS AND THREE-SPEED FOCAL-PLANE SHUTTER, TAKING 16 NEGATIVES 1½-IN. × 1½-IN. ON NORMAL 8-EXPOSURE V.P. FILMS

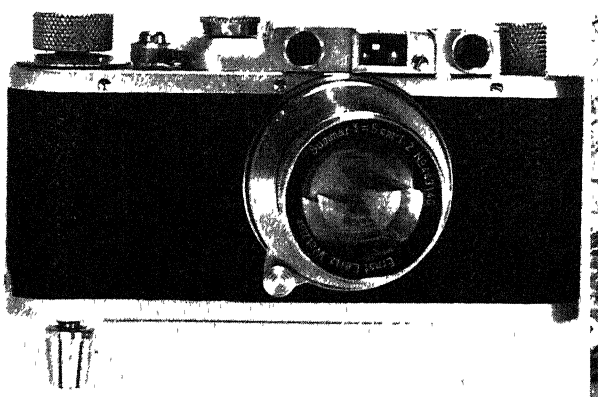


Kodak Ltd]



Kodak Snapshot]

KODAK "RETINA I" KODAK EKTAR F/3·5 LENS AND COMPUR-RAPID SHUTTER, "RETINA" PHOTO AT F/5·6, $\frac{1}{50}$TH SECOND, NO FILTER



E. Leitz (London) Ltd]



Dr. Robert Semple]

LEICA MODEL III B, SUMMAR 5-CM. LENS F/2. THE LEICA WAS THE FIRST STILL CAMERA TO TAKE 35-MM. FILM, AND TO HAVE COUPLED RANGE-FINDER. LEICA PHOTO WITH ELMAR 5-CM. LENS AT F/6·3, $\frac{1}{10}$TH SECOND, YELLOW FILTER NO. I

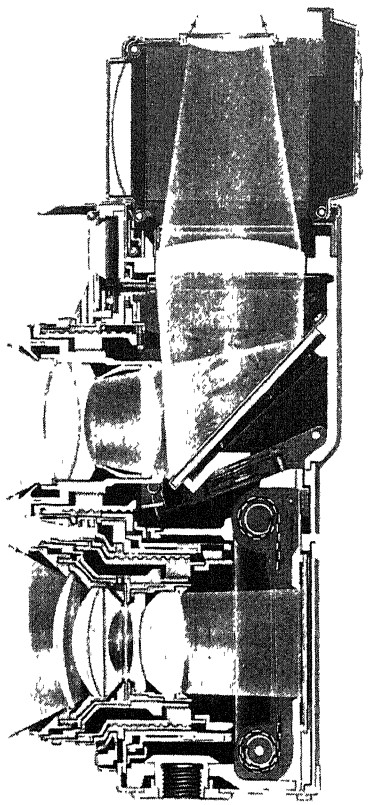


Zeiss Ikon Ltd.]

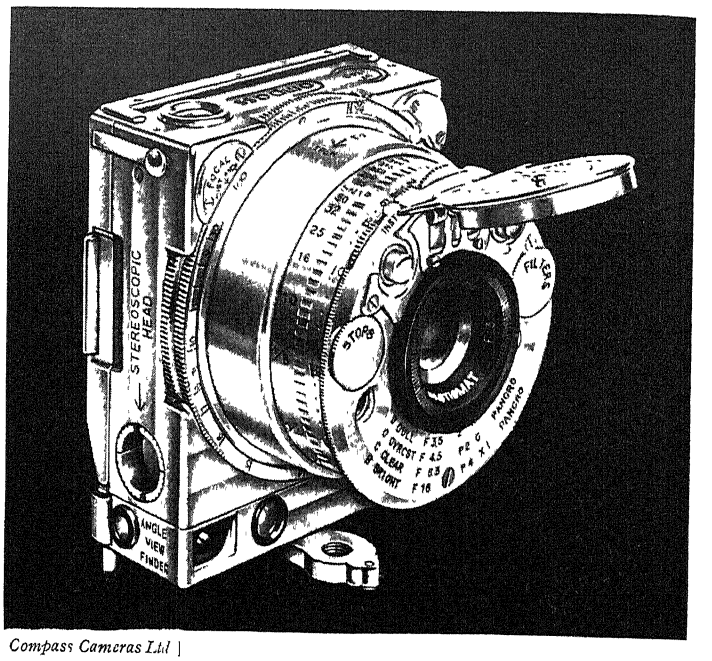


Ryde Studio]

CONTAX III, WITH BUILT-IN PHOTO-ELECTRIC EXPOSURE METER. 15 INTERCHANGEABLE ZEISS IKON LENSES GIVE 9 FOCAL LENGTHS; PHOTO WITH SONNAR LENS F/4, FOCAL LENGTH 13·5 CMS. AT $\frac{1}{1000}$TH SECOND

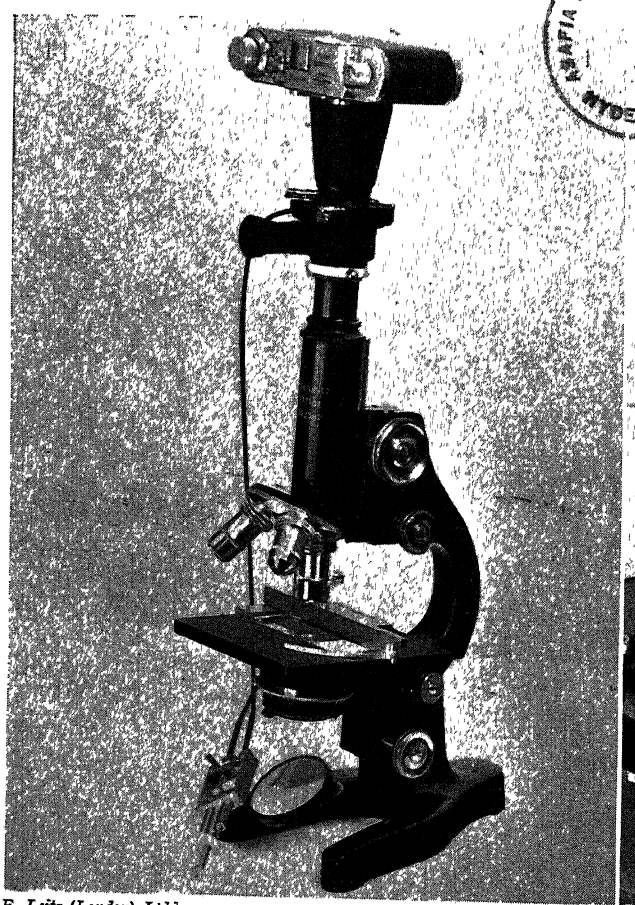


Zeiss Ikon Ltd]
INTERIOR OF CONTAFLEX REFLEX CAMERA LOWER PART IS THE TAKING LENS ; MIDDLE SHOWS PATH OF RAYS THROUGH VIEWING LENS REFLECTED ON TO FOCUSING SCREEN (PLANE CONVEX LENS)

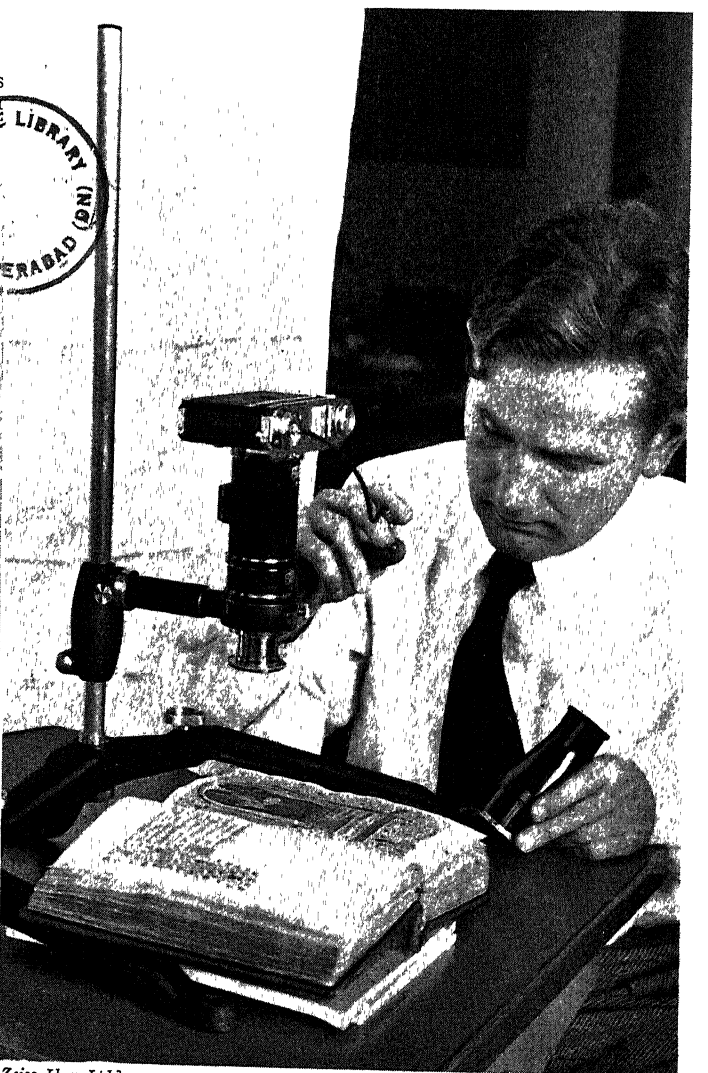


Compass Cameras Ltd]
COMPASS, CONSTRUCTED FOR THE COMPANY BY LE COULTRE, THE WATCHMAKERS. F/3·5 KERN LENS OF 37-MM. FOCAL LENGTH

MAFIA STATE LIBRARY (N) HYDERABAD



E. Leitz (London) Ltd.]
MICROPHOTOGRAPHY WITH THE LEICA



Zeiss Ikon Ltd.]
PHOTOSTATIC WORK WITH THE CONTAX II

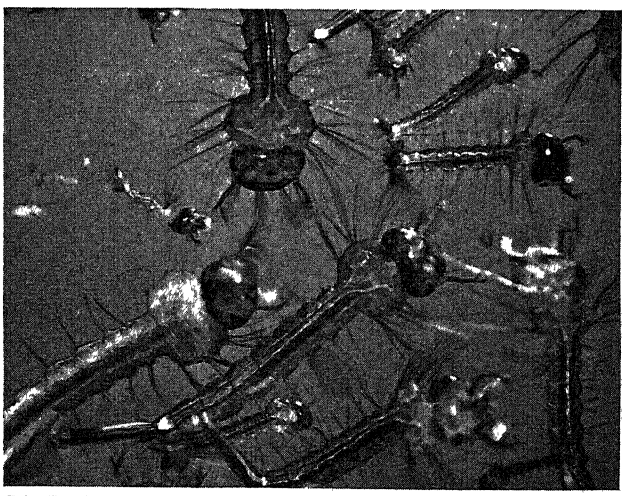
Note : All the cameras illustrated are " miniature " cameras, taking 35-mm. film

screens, and there was a certain revival of interest in stereo-projection by the anaglyph method. No method of stereoscopic projection is yet available for theatre use which does not involve individual viewing devices The introduction of cut sheet Kodachrome led to an increased use of colour transparencies and prints for lobby display and film magazine illustration.

Progress in television in Great Britain, the United States, and Germany commanded the interest of the cinema industry, partly because of its possible effect as a competitor for the industry, but mainly in regard to the possible employment of cinema film as the source of images for television scanning. Television standards have now been agreed on in the United States. Other advances in the cinema industry included new fine-grain films for sound recording and background photography, refinements in the design of cameras and printers, and in the quality of sound and picture reproduction in the theatres. Further research was carried out on binaural projection of sound films, but it has not yet reached the stage of general theatre adoption Studios used portable apparatus for the bulk of their sound recording, so permitting quick interchange of location.

Colour Photography. The use of colour film was enormously extended in 1938. The Technicolor three-colour subtractive process was generally used for colour films in the cinemas, and Technicolor production in its British and United States plants increased considerably over 1937. In Germany, Agfa announced the Pentachrome process, in which a lenticular bipack is used in the camera, and a process of the Gasparcolor type for printing In the amateur field, colour film made further rapid strides, the bulk of the pictures being made on the Eastman Kodachrome three-colour subtractive monopack type of film. In Britain, an improved form of the Agfacolor film was made available, based like its predecessor on the earlier Fischer process. Colour film in 35-mm. width was increasingly used in still cameras, to provide transparencies for projection in small, portable projectors in the home, lecture hall, etc.

Two events of outstanding importance in the colour field were the announcement by Eastman of a service for making duplicates of 16-mm Kodachrome cinema films, and the introduction of Kodachrome in the common cut film sizes This latter opened up a new medium for commercial colour photography, colour lantern slides, etc. It provides good originals for reproduction by photo-engraving methods, particularly for advertising and magazine illustration.



Zeiss Ikon Ltd.]

MICROPHOTOGRAPHY : THE LARVÆ OF GNATS



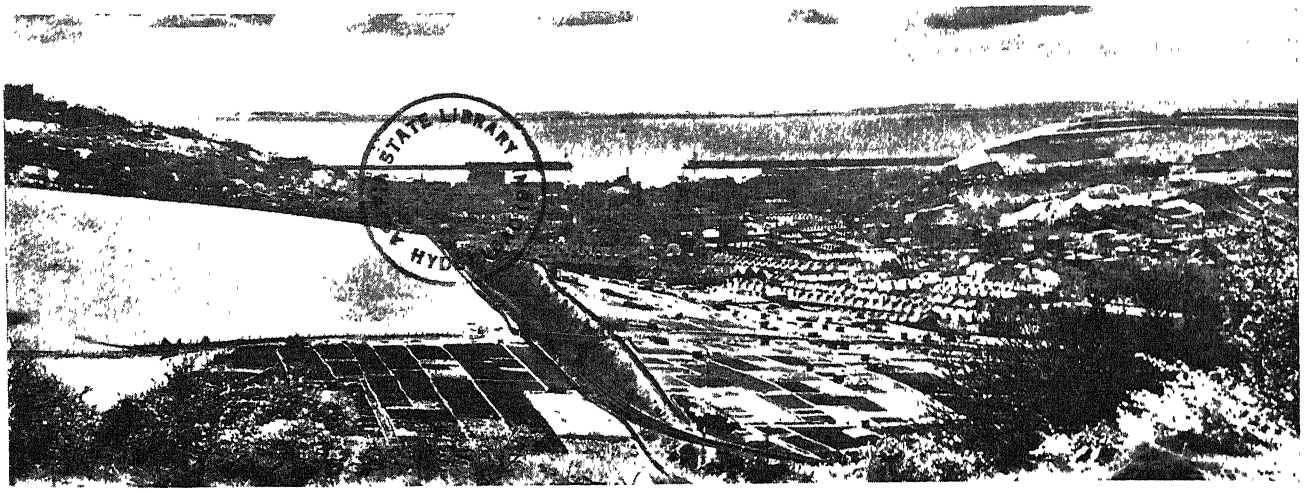
Percival Campkin]

ARCHÆOLOGIC WORK WITH THE CONTAFLEX AT F/8, 1/100. NEOLITHIC SKULL EXCAVATED RECENTLY AT AVEBURY BY ALEXANDER KEILLER

No colour process was announced by which colour prints on paper could be made in a single operation from colour transparencies, but large numbers of such prints were prepared from separation negatives made in one-exposure cameras, or from colour transparencies. In 1938 more papers were published on the theory of three-colour photography than in any previous year, and the new approach will undoubtedly provide the basis for the proper understanding of colour reproduction. The increasing use of colour photography emphasized the need for careful control of the quality of illumination. A new colour temperature meter was described for this purpose, and a new series of studio lamps was put out by the General Electric Company, all matched to operate at a colour temperature of 3,200° K., which is that for which Kodachrome cut sheet film is balanced. For the projection of colour still transparencies and 16-mm. cinema films to very large sizes, high-wattage projectors were made available, in which particular attention was paid to the cooling of the film.

Documentary Photography. Although the copying of documents on to narrow film has been practised for some years for banks, other commercial purposes, and libraries, during the past year or so, largely owing to the availability of fine-grain films of high resolving power, the applications have grown by leaps and bounds. The Bank of England is reported to be making photographic records of its entire files back to 1694, and an apparatus has been installed in the British Museum, where some hundreds of the rarer books in the library have been photographed. Britain, however, lags far behind the United States, where services are available for supplying film copies of library material from widely distributed sources, newspaper publishers are having their entire back files and current issues photographed, records of the Census Bureau, the Social Security Board, and other extensive government files are being copied on to 35-mm. film. Records on film occupy about one-fiftieth of the space of the original documents. Special cameras capable of high output have been designed for this work. It is said that thirteen per cent of American banks now photograph the cheques which they handle daily.

A study by the U.S. Bureau of Standards of the viscose type of Ozaphane film (diazotype process), which has been proposed for documentary photography, showed that its



The Times]
PANORAMIC PHOTOGRAPH TAKEN WITH A LONG-FOCUS LENS, SHOWING DOVER AND THE COAST OF FRANCE BEYOND THE FORESHORTENED CHANNEL. AN ILFORD INFRA-RED PLATE AND FILTER WERE USED

stability is much less than that of cellulose acetate and that it is not suitable for permanent records. Towards the end of 1938 the film was made available on acetate support.

General Photography. There was a growth of interest on the part of the amateur in developing and printing his own pictures. The miniature camera, taking negatives of small size, showed increasing popularity. This was partly due to the introduction of many new models of camera of low price, and partly due to the availability of new films for black-and-white and colour. Recent years have seen a revolution in the manufacture of photographic emulsions, extremely high speeds being attainable without undue graininess, and extremely fine-grain films with high speed. The older types of film for the miniature-camera user have been very largely replaced by the newer varieties, permitting extreme degrees of enlargement, and photography under artificial and poor daylight conditions previously considered outside the range of high-speed photography. Although special developers for producing fine grain still enjoyed a certain popularity, the need for them was much reduced by the introduction of the new fine-grain films.

Photography indoors in black-and-white and colour by artificial light was a commonplace, facilitated by the new fast films and a simple lighting equipment. Studies made of the suitability of gaseous discharge lamps for photography indicated that the high-pressure mercury vapour lamps show promise for studio use and projection of black-and-white film. They are not suited for colour work, but steps are being taken to fill in their spectral gaps by combining them with luminescent materials. The use of flashlamps increased for press and studio photography, and new lamps using a wire of aluminium-magnesium alloy instead of aluminium foil, and improved forms of the older lamps with higher intensity at the peak and longer periods of maximum intensity were made available.

Special Applications. In the field of radiography, new films of high speed and contrast were used, coupled with intensifying screens of fine grain. The use of X-ray photography increased steadily as a means of medical diagnosis and in the industrial fields. Several installations of very high voltage were available for both kinds of work. There was some increase in the use of gamma rays for industrial radiography, and the producers of radium were encouraging work in this field to provide a new outlet for radium products.

Large aerial survey projects were continued and intensified during the year. About three-quarters of Canada has been photographed from the air, and in the United States an area of over 1,500,000 sq. miles has been photographed for forest survey, soil conservation experiments, and for the estimation of crop areas for the Agricultural Adjustment Administration. Several new types of aerial camera were in use, in particular a nine-lens camera capable of photographing several hundred square miles at each exposure, a British seven-lens air survey camera, a special camera for night photography using synchronized flashlight bombs, cameras using short-focus lenses of exceptionally wide angle, and an apparatus using 500 ft. of film instead of the normal 75 ft. The majority of aerial negatives were made on the low-shrinkage "topographic" type of cellulose nitrate film support, and a corresponding safety film of cellulose acetate was introduced. Low-shrinkage waterproof papers were used for mapping and for rapid drying after processing, and a film capable of giving duplicate negatives in single printing and developing operations was coming into use.

Among the interesting applications of photography in technical and scientific fields were: remarkable cinema films of the solar prominences made with the spectrohelioki nematograph in absence of an eclipse at the McMath-Hulbert observatory; a time-lapse film of root growth speeded up 30,000 times, shown at the Royal Society; a photographic study of combustion and knock in a spark-ignition engine, made at the Langley Memorial Aeronautical Laboratory; several studies of atomic breakdown and disintegration by cosmic rays; a dispersion spectrum of the sun 15 ft. long, and pictures of the planets, all made on Kodachrome film by Mount Wilson observatory; natural colour high-speed motion pictures of electric arcs struck in different gases, made by the General Electric Research Laboratories. (*See* also PRINTING; MOTION PICTURES.)

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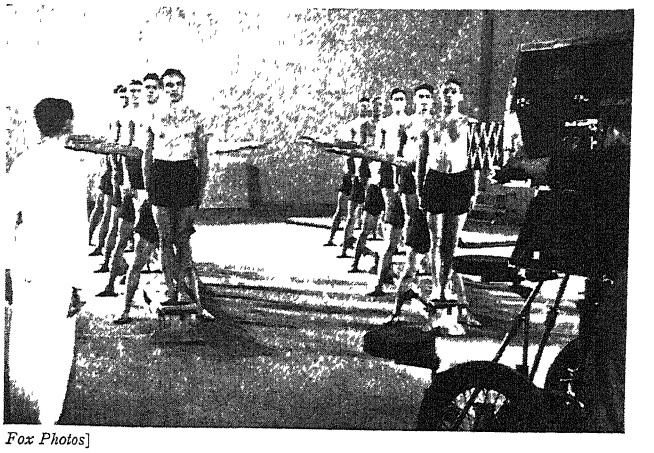
PHYSICAL EDUCATION. The year 1937 saw the inauguration of a great national scheme for the improvement of health and physique in Great Britain The government's proposals, embodied in the Physical Training and Recreation Act of 1937, have received a welcome measure of support from people of all shades of political opinion and from all classes of the community.

For many years steady progress and expansion have been taking place in the physical education of children, and during 1938 many local education authorities took advantage of their increased powers under the new Act to provide additional school gymnasiums, playing fields, holiday camps, and other facilities for physical education and recreation Many additional organizers of physical education have also been appointed, to advise and assist local education authorities and their teaching staffs in all matters concerning physical education. The appointment of these officers, together with improved facilities for both outdoor and indoor physical activities, augurs well for the future progress of physical education in the schools. Many instructional courses for teachers have been held in all parts of the country, advanced courses in the theory and practice of physical education have been started at several teachers' training colleges, and short intensive courses of three months' duration are now also available.

Although the facilities for physical education in many schools are by no means all that could be desired, on the whole the children are receiving a sound basic training which will stand favourable comparison with anything of the kind in other countries, and is providing a good foundation upon which the national scheme for the further physical education of young people over school age may be built.

The aims and objects of the Physical Training and Recreation Act, as well as the organization which the government set up to implement the Act, are now so well known that it is unnecessary to give them here in detail. The formulation and development of large-scale schemes of the type proposed by the government in connexion with physical training and recreation, especially for persons over school age, must of necessity be done slowly and carefully. During 1938, the two National Fitness Councils have done a great deal of necessary preliminary work in connexion with the scheme. The Area Committees, which were appointed towards the end of 1937 to study the needs of their respective areas and to initiate surveys of all available local facilities, are working in the closest co-operation with the National Councils, and a considerable amount of useful information has already been collected. In addition, the Area Committees have the important work of advising the Grants Committees with regard to local applications for grant-aid. The work done by the National Fitness Councils during the year, however, has not by any means been restricted to the collection of information and the consideration of applications for grant-aid. Careful consideration has also been given to many questions concerning the purely technical side of physical training and to publicity and propaganda. Demonstrations and public meetings have been arranged in many areas. Special attention is being paid to the medical aspect of physical training, and a committee has been formed to consider this important matter.

The success of any national scheme of physical education is dependent, not only upon facilities, but also upon leadership. As some time must inevitably elapse before the new National College of Physical Training is ready, the Central Council of Recreative Physical Training is doing admirable work in the meantime by providing courses of training in many parts of the country. These courses attract enthusiastic and keen men and women, many of whom are already doing valuable work as voluntary part-time leaders of youth movements and keep-fit classes. It is regrettable that so few local education authorities have taken advantage of their powers to appoint full-time leaders of recreative physical training.



Fox Photos]
TWENTY CHOSEN YOUNG MEN FROM THE CARNEGIE INSTITUTE, LEEDS, MAKING AN INSTRUCTIONAL FILM IN LONDON FOR THE NATIONAL FITNESS COUNCIL, FEB. 22, 1939

The National Fitness Councils are endeavouring to improve national fitness in a truly democratic manner by developing and co-ordinating the efforts of multitudinous local authorities and voluntary organizations. No attempt is being made unduly to stress formal physical exercises, but rather encouragement is being given to the practice of the many excellent forms of natural physical activities, such as walking, swimming, games, and athletics. Efforts are being made to bring within the reach of everyone facilities for healthy exercise. The wise use of leisure and the importance of recreation are being especially stressed For success a voluntary method of this type demands the closest possible co-operation between all concerned and necessitates a realization on the part of everyone of the importance of individual health and fitness: for, to quote Lord Horder, "the health of a nation is only the average of the health of its individual citizens". (E. M.)

PHYSICS. No very exciting new discoveries in physics were made during 1938 but the results of a vast number of researches were published. Only a few of the most interesting can be mentioned here. In 1938 as in all very recent years nuclear physics was probably the most popular branch.

Nuclear Physics. The existence of nuclear isomers, that is nuclei with almost equal atomic weights, equal atomic numbers, but different properties, announced in 1937, has been confirmed by the discovery of many new nuclear isomers in 1938. For example, Burcham, Goldhaber, and Hill have shown that scandium of atomic weight 44 exists in two forms which emit positrons and decay to half-value in 52 and 4 hours respectively.

When an atomic nucleus is formed by a nuclear reaction it often has more energy than in its normal state. Such a nucleus is called an excited nucleus and it usually emits its excess energy as a gamma ray By measuring the energy of the gamma rays emitted the excess energy of the nucleus can be found. For example, Fowler, Gaerttner, and Lauritsen at the California Institute of Technology found that when boron is bombarded by protons giving carbon, gamma rays with energies 4·3, 11·8, and 16·6 million electron volts

are emitted. It is supposed that the excited carbon atom formed by the nuclear reaction $B^{11} + H^1 \rightarrow C^{12}$ either emits all its excess energy as one gamma ray of energy 16·6 or first emits a gamma ray with energy 11·8 and then one with energy 4·3. The difference between 11·8 + 4 3 = 16·1 and 16·6 is attributed to experimental errors

When the energy of the incident particles is varied it is found that for certain values of the energy the nuclear reaction takes place with abnormally high intensity. It is supposed that this occurs when the energy of an incident particle plus that of a nucleus in the target is equal to the energy of an excited state of the nucleus formed by the combination of an incident particle and a target nucleus. Bernet, Herb, and Parkinson, using high-energy protons from their high-pressure Van de Graaf generator to bombard fluorine, have found seven such peaks of reaction intensity between 0·2 and 2·2 million electron volts proton energy.

Joliot and Zlotowski at the Collège de France have made new measurements of the energies of nuclear reactions by observing the tracks of the emitted particles in an expansion chamber in a strong magnetic field. For the reaction

$$^{10}_{5}B + ^{4}_{2}He \rightarrow ^{13}_{6}C + ^{1}_{1}H$$

they find two groups of protons with energies 4·3 and 2 o million electron volts instead of the group with energy 3·1 million electron volts found previously by others. Bombarding paraffin wax containing heavy hydrogen with alpha rays from polonium they discovered a new reaction.

$$^{4}_{2}He + ^{2}_{1}H \rightarrow ^{5}_{2}He + ^{1}_{1}H$$

The helium of atomic weight 5·0106 formed in this way appears to be stable. Helium therefore has isotopes with atomic weights approximately equal to three, four, and five.

Hafstead, Heydenburg, and Tuve have continued their work on the scattering of protons by protons at the Carnegie Institution in Washington. Their new results indicate that there is an attractive force between two protons very close together in addition to the electrostatic repulsion between their electric charges.

The properties of neutrons were the subject of a great many investigations during 1938. Alvarez at the University of California has developed a very ingenious new method which in effect enables a parallel beam of slow neutrons, all having nearly the same kinetic energy, to be obtained. The neutrons from beryllium bombarded by protons are allowed to fall on a block of paraffin wax. The neutrons collide with the protons in the block and lose energy until they are in thermal equilibrium with the paraffin. The slow neutrons so obtained diffuse about in the wax and some escape. The beam of protons bombarding the beryllium is made intermittent so that the neutrons from the paraffin are also intermittent. Suppose for example that the paraffin emits 100 puffs of neutrons per second and that the neutron detector is 20 ft. from the paraffin source. The neutrons in a puff will not all arrive at the detector together; the fast ones will arrive first and the slower ones later, so that at any instant after the puff was emitted the neutrons arriving will all have the same velocity. The detector is also made intermittent, so that it is only sensitive 100 times per second and 1/200 sec. after each puff is emitted. The neutrons detected therefore travel the 20 ft. in 1/200 sec. and so have a velocity of 4,000 ft. per second. If the detector is moved to 10 ft. from the source, then the neutrons detected will have a velocity of 2,000 ft. per second. In this way the properties of neutrons with different velocities can be studied. Similar experiments are being attempted in England and Holland but no details are yet available.

The magnetic scattering of neutrons has been studied by Powers of Columbia University He finds that when neutrons are passed through an iron plate the number getting through is increased when the iron is magnetized. The neutron's beam is polarized by passing through the magnetized iron so that it passes more easily through a second iron plate magnetized parallel to the first one From these and other experiments Powers concludes that neutrons have a magnetic moment of about one nuclear magneton.

Many unstable atomic nuclei emit a positive electron or positron which reduces the nuclear charge and atomic number by one unit. For example, gallium of atomic weight 67 and atomic number 31 changes into zinc also of atomic weight 67 but atomic number thirty. It has been found that in many such cases the nucleus, instead of emitting a positron, captures a negative electron. This process has been studied by Williams and Pickup in England and by Alvarez in America.

Cosmic Rays. The discovery of heavy electrons in cosmic rays, in 1937, was confirmed, in 1938, by many observers who obtained photographs of tracks made by these particles. Heavy electrons appear to be either positively or negatively charged particles with masses about 200 times that of an electron.

Neddermeyer and Anderson have published a particularly interesting heavy electron-track photograph. This track shows a particle moving in a magnetic field of 7,000 gauss and passing through a glass tube counter. The track ends in the gas in the expansion chamber. Assuming the particle to have a mass 240 times that of an electron, the curvatures of its path showed that its energy was ten million electron volts before passing through the glass tube counter and only 0·21 million electron volts after passing through. The portion of the track after passing through the counter was 2·9 cm. long. If the particle were an ordinary positive electron its energy after passing through would have been 7 million electron volts and it would have been able to travel 6,000 cm. instead of only 2·9 and also it would have made a thin track instead of a thick one. If it were a proton its energy after passing through the counter would have been only 25,000 electron volts and it would have made a track only 0·04 cm. long. Thus it is quite certain that the track could not have been due to either a proton or a positron (positive electron). Heavy electrons are probably unstable and may disintegrate into a positron and a neutron, but there is no evidence of the emission of a positron at the end of the heavy electron track.

Cosmic rays at sea level consist of particles absorbed in about 10 m. of water, generally believed to be electrons and positrons, together with extremely penetrating particles, some of which can pass through 800 m. or more of water. The nature of these penetrating cosmic rays is as yet uncertain. Arley and Heitler suggest that they may be electrically neutral particles with masses equal to that of heavy electrons. Neutral particles like neutrons produce no ionization and so lose very little energy as they pass through matter, so that such particles with very high kinetic energy would be very penetrating.

The penetrating particles are not heavy electrons but appear to produce heavy electrons by collisions with atomic nuclei. Thus Schein and Wilson by experiments in

aeroplanes have shown that heavy electrons are produced by non-ionizing particles even above 20,000 ft

The production of showers by cosmic rays was studied extensively during 1938. These showers appear to be produced, in some cases at any rate, by the non-ionizing penetrating particles A penetrating particle collides with an atom and causes the emission of a gamma ray. This gamma ray then produces a positron and an electron These electrons then in turn produce gamma rays which produce electron pairs which produce gamma rays and so on, so that a shower containing a great many electrons is produced Auger has described experiments showing that such a shower produced in the open air may spread over an area of 25 sq yards. The total energy of the particles in a shower may be as great as 10^{16} electron volts.

A study of cosmic ray showers at the Bartol research foundation has shown that at sea level in the open air there are a great many small showers. Inside a building the showers are much larger and slightly more numerous. In a mine 100 ft. below the surface there are very few showers, but they are all very large.

Dymond and Carmichael have studied cosmic ray intensities at high altitudes in Canada near the north magnetic pole They find that at heights such that the air pressure is greater than 100 mm. of mercury the cosmic ray intensity is the same at the north magnetic pole as at magnetic latitudes of 50°, where it has been measured by Millikan and Neher and others in previous years. At greater heights where the pressure is less than 100 mm. Dymond and Carmichael find that the intensity increases as the north magnetic pole is approached The greatest intensity they find is at about 20 mm air pressure at the north magnetic pole.

Several strong magnetic storms occurred during 1938 and several observers reported variations of cosmic ray intensity during these storms.

Liquid Helium. Remarkable properties of liquid helium were reported by Kapitza and by Dannt and Mendelssohn in 1938. If a glass beaker is lowered into liquid helium, at a temperature not more than two degrees above absolute zero, the liquid appears to flow through the glass until the liquid surfaces are at the same level inside and outside the beaker. It is found that the liquid spreads over the glass surface in a thin film and flows through the film. The viscosity of the liquid is extremely small, about the same as for hydrogen gas, so that it can flow at an appreciable rate in a very thin film. At temperatures above 2·2° absolute, liquid helium has quite different properties, although the viscosity does not change suddenly at this temperature.

Properties of Thin Films. Astbury, Bell, Gorter, and Van Ormondt have reported some interesting experiments on thin films of crystallized egg albumen. Such films consist of molecular layers as was first shown by Langmuir. In egg-albumen films the spacing of the layers is about one ten-millionth of a centimetre. Astbury *et al.* were able to make a thick layer by superposing many thin films, each containing a known number of molecular layers. The thickness of the layer was measured with micrometer callipers and so the spacing of the molecular layers was directly determined. Bowden and Leben have shown that when one metallic surface slides over another with a film of lubricating mineral oil between the surfaces the motion proceeds in a series of minute jerks. When the lubricating oil used was a long-chain fatty acid, however, the motion was continuous. Such experiments are important in connexion with theories of lubrication.

Mass Spectrographs. Measurements of atomic masses with the mass spectrograph invented by Aston were reported by several observers during 1938. For example, Dempster found several new isotopes and made very exact determinations of a series of atomic masses extending over the whole list of elements. Aston's packing fraction is the percentage difference between the atomic weight of $O^{16} = 16$ and the atomic mass number. For example, the atomic weight of mercury of mass number 200 is 200·016, so that its packing fraction is $0{\cdot}016 \times 100/200 = 0{\cdot}008$, or 0·8 part per 10,000. The packing fraction is positive for elements with mass numbers less than 20 and greater than about 170 with the minimum value near 50.

The very large cyclotron being constructed at the University of California and the smaller cyclotrons in England and other countries are not yet complete but are understood to be progressing satisfactorily. The large Van de Graaf electrostatic generators in pressure tanks under construction by the Westinghouse Company, the Carnegie Institution, and the Rice Institute are reported to be nearing completion. (H. A. W.)

PHYSIOLOGY. The wide field covered by modern physiological investigation is well illustrated by the matter dealt with at the XVIth International Physiological Congress which met at Zürich from Aug. 14 to 19, 1938. In addition to a large number of individual communications, arrangements were made for discussions on fifteen special topics, selected by reason of their general interest and importance. Two of these topics, humoral transmission of nerve action, and the functions of sterol derivatives, were dealt with in the *Ency. Brit. Book of the Year*, 1938. The others were: the functions of the different parts of the renal excretory system; the relation of local metabolism to circulatory regulation; hydration and the reversibility of oxidative catabolic reactions; permeability of the skin for drugs and poisons, the electrical parameters of cells; problems of fœtal respiration; problems of the feeding of nations; reflex control of respiration; functions of the suprarenal cortex, hormones of the anterior pituitary; phonetic problems; potential poisons; functions of the vitamin B_2-complex.

The problem of renal excretion is one of long standing, but has made definite progress in recent years. While it is almost generally admitted that glomerular-filtration plus tubular reabsorption forms the background of the picture, considerable evidence points to the tubules also having a secretory function. The most compelling evidence is that the kidneys of certain species of fish are devoid of glomeruli. Secretion in the tubules in higher animals has been shown fairly clearly for phenol red and other dyes, and, in man, for creatinine to a limited extent. Glomerular filtration studies in man by the urinary clearance method lend support to the belief that the glomerulus does allow the passage of what is virtually a protein-free filtrate, and that this is subsequently converted into the urine by a process of absorption and secretion as this filtrate traverses the uriniferous tubule. In the amphibian kidney the fluid has been examined by micro-methods as it passes along, and it has been found that glucose and some water reabsorption occurs in the proximal tubule. if the kidney is poisoned by phlorrhizin, the glucose reabsorption ceases. In the distal tubule, sodium chloride is reabsorbed and the reaction of the fluid changes to acid, while much water is reabsorbed.

Respiratory physiology has been concerned chiefly with investigations on fœtal respiration and on respiration at high altitude. In both cases oxygen has to be obtained under apparently disadvantageous conditions. In the fœtus, the

supply of oxygen is facilitated by various factors. First, the blood flow through the placenta is high; secondly, there are changes in the dissociation curves of maternal and fœtal bloods, as result of which oxygen is more readily given up by the former and taken up by the latter, thirdly, by reason of the peculiarities of the fœtal circulation, the heart and head of the fœtus receive more highly oxygenated blood than the rest of its body. It appears that the ductus arteriosus, equipped with a special mechanism, normally closes within a few minutes of birth, and respirations then commence as soon as the central nervous system begins to feel the effects of oxygen lack.

At high altitudes very complex interdependent changes occur in the fluids of the body. The conditions differ fundamentally according to whether acclimatization has occurred, as in slow ascents, or not, as in aeroplane flights When acclimatization has occurred, there is increase of blood hæmoglobin and of red cells, sometimes enough to offset the partial oxygen desaturation; there is little permanent change in osmotic pressure, since the reduction of bicarbonate due to over-breathing is counteracted by retention of chloride. Access of oxygen to muscles is increased by a rise in the myoglobin content of the muscles. There is no evidence for a change in the properties of hæmoglobin, nor for oxygen secretion by the lungs.

In high flying it is found that pilots whose respirations show most augmentation suffer least from oxygen lack. It would appear that in the use of sealed-cabin aeroplanes, the accumulation of carbon dioxide up to two or three per cent might, by leading to an augmentation of breathing, enable pilots to fly higher with less oxygen lack. Addition of oxygen to the air is usually required by aviators at 10,000–12,000 ft. or over, and is essential at 15,000 or 16,000 ft.

Investigations of practical importance in the prevention of thrombosis and embolism have been carried out by Best and his colleagues at Toronto. The white clot which is formed at sites of damage in the circulation consists almost entirely of blood platelets, and grows downstream. Administration of heparin by intravenous infusion slows or stops the process of thrombus formation, and clinical trials with this substance have been encouraging. Other important work on the circulation concerns the relation of local metabolism to the regulation of the circulation. When an organ is active it receives an increased blood supply, and this increase is effected in various ways: first, if the organ is large, there may be an increase in the general circulation rate, accompanied by contraction of the spleen and perhaps of the general venous system; secondly, there may be local relaxation of blood-vessels, allowing a fuller supply of blood to the active organ; thirdly, there may be constriction of vessels elsewhere in the body, so diverting blood to the active region. Probably all three types of response are involved, but usually one predominates over the others, and many factors are responsible for bringing them into play. The action of chemical factors is probably very important. Of these, adrenaline has a general action, stimulating the heart and contracting spleen, veins, and most small arteries. Carbon dioxide has both a local vasodilator effect and a general constrictor action. Other substances have only a local action and are produced in the active organs themselves. These local metabolites are numerous, and include such various substances as acetyl choline and adenylpyrophosphate, and perhaps histamine or some substance closely resembling it. Recent research indicates that these substances do not necessarily have to enter the bloodstream in order to produce local vasodilatation; in fact, they would be at some disadvantage if this were so, since they would enter only the venous parts of the capillaries and so be without effect on the arterioles. Actually the metabolites bring about dilatation of the entire local vasculature by exciting reflexes (perhaps axon reflexes) from the tissues in which they are formed, and which are endowed with nerve endings sensible to such chemical stimulation. Another factor of importance in the causation of local vasodilatation is that the vessels in an active region are much less sensitive to constrictor influences, *e g.* vasoconstrictor nerve impulses or chemical vasoconstrictors such as adrenaline.

The important branch of endocrinology is increasingly active, and has been concerned with problems relating to the adrenal cortex, the sex hormones, and especially the pituitary body. Although there is now no doubt about the great importance of the anterior lobe of the pituitary body as a controller of almost all other endocrine organs, there is still doubt about the number of actual hormones which it produces. If indeed each of the physiological effects producible by various types of extracts of pituitary is to be ascribed to a specific hormone, then it is truly remarkable that an organ of such relatively simple structure can have such protean functions. Among the actions produced by extracts of anterior pituitary and presumably due to hormones, none is perhaps more interesting and important than the one which, on injection, antagonizes the action of insulin. It was shown some years ago by Houssay that whereas removal of the pancreas caused diabetes, removal of both pancreas and pituitary did not. Diabetes might conceivably therefore be due either to the absence from the body of the pancreatic hormone (insulin) or to the presence of an excess of the pituitary hormone. The isolation from the pituitary body of a hormone which antagonizes the action of insulin lends support to this belief, and may explain those curious cases of diabetes which are insensitive to, and therefore not greatly relieved by, insulin in normal doses. Such cases would be due, not, as in ordinary diabetes, to lack of insulin, but to the presence in excess of the so-called glycotropic factor A curious feature of the action of pituitary extracts is that when repeatedly injected into dogs a permanent state of diabetes, with degeneration of pancreatic islet tissue, is produced, and is apparently identical with that resulting from removal of the pancreas.

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(C. L. E.)

PICASSO, PABLO (1881–), Parisian painter and etcher of Spanish (Catalan) birth, was, with Georges Braque (b. 1881), the originator of the "abstract" form of painting known as Cubism. Reproductions of his work in this vein may be seen in *Ency. Brit.*, Pl. XVIII, Painting, and Pl., Post-Impressionism, while at Pl. XX, Painting, are reproduced two works in an entirely different manner (*see* also vol. 17, p. 907 for an account of his career).



Man Ray] PABLO PICASSO

Apart from the cubist paintings the originality of Picasso—a master, as

has been said, of not one but many schools—is perhaps best shown in his settings, costumes, etc , for the Russian ballet; in recent years he has produced some massive figure paintings, which show a slight classical influence, and in 1937 a large mural decoration depicting the bombing of Guernica, first shown in Paris and at the end of 1938 included in an exhibition of his works held at the Whitechapel Art Gallery, London, on behalf of funds for medical aid to Spain

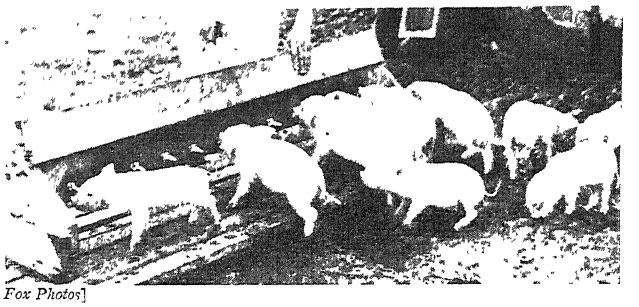
Picasso greatly sympathized with the government during the Spanish civil war, and was one of the hundred and fifty leading Spanish intellectuals who, after the fall of Teruel in Feb 1938, signed a manifesto proclaiming their confidence in Senor Negrín. He is married, and has one son.

PIGS AND BACON. Although output has expanded substantially in the last few years, mainly as a result of import restrictions, yet insufficient progress has been made in the improvement of quality To improve breeding, producers have made little use of the Livestock Improvement Scheme During the last five years the number of "premium" boars licensed each year, *i.e.* those qualifying for subsidy by reaching a certain standard, has been around one thousand This represents less than ten per cent of the number of service boars in use. Nevertheless there has been recently some improvement in quality. Since the collapse of the first Pigs Marketing Scheme and the rise in 1937 of feedingstuffs prices, there is some evidence that as a result the small men have been giving up pigs, and that production has been passing more into the hands of the bigger farmers. This may be one of the reasons for the beginnings of improvement in quality which is to be noticed To accelerate progress the Bacon Development Board has now decided to set up two litter-testing stations modelled on Scandinavian lines, one in Yorkshire and one in Gloucestershire. (*See* also AGRICULTURE.)

In Denmark the pig industry depends almost entirely on the British market and has had to be reorganized to fit in with the British quota system. Five million pigs had to be reduced to three millions. The restriction scheme pivots on the issue of slaughter cards to producers. Pigs sold with a card obtain the full market price, whereas any sold without a card obtain only an extremely low price. In order accurately to forecast supplies the Danish government instituted a pig census every six weeks; from this it emerged that the seasonal variation in the pig population amounted to only 3 per cent. Cards were allocated to producers in three ways: on the value of the farm, on the farm's pig deliveries in 1933–34, and on the amount of skim milk used in 1932. Recently some cards have been taken away from the larger producers and given to smallholders, many of whom are in financial difficulties.

In Holland overproduction became almost as serious as in Denmark. The Dutch instead of limiting slaughterings limited the number of pigs a farmer might keep; for one sow you might keep 8 pigs, for two sows 15 pigs, for three sows 20 pigs. To prevent fraud the pigs were all tattooed with a number immediately after birth. It soon proved necessary, however, to restrict the number of sows. Then producers tried to compensate themselves by increasing the average weight of pigs for slaughter. At present the control scheme works well and in 1938 pig prices were profitable.

In New Zealand the output of pigs shows an increase in the number of baconers, and grading was introduced in Feb. 1938. Producers are paid according to thickness of shoulder fat and of loin fat. Slaughterings are now 10·7 per sow per annum, a satisfactor advance on the figure of 5·7 ten years ago.



Fox Photos]

ORPHANED PIGS FED ON COW'S MILK FROM A TEATED TROUGH

Bacon. The capacity of English factories has greatly increased in the last four years, and there are now between twenty and thirty factories with a capacity exceeding 1,000 pigs per week each At the present time, the chief object of curing pig-meat is not preservation, but rather to impart a desired flavour; consequently, bacon is very mildly salted. A small proportion of the British production is prepared still in several hundred small premises, often engaged also in the production of sausages and meat-pies.

In 1930 British bacon production was estimated at 1,424,000 cwt. but this had grown to 3,481,800 cwt. by 1936 since when there has been a slight decline. Imports have been subject to quantitative regulation since 1932 with the object of stabilizing total supplies at 10,670,000 cwt. per annum. In 1938 the total bacon imports amounted to 6,868,467 cwt of which Denmark supplied 3,389,192 cwt. and Canada, 1,275,573 cwt.

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PITTSBURGH, a city of Western Pennsylvania, had an estimated population of about 685,000 in 1938 and an area of 54·295 square miles. An important slum clearance project is under way under the direction of the Pittsburgh Housing Authority. Work was begun on a site in the Hill district and other sites will be developed later. The authority has so far had $18,500,000 earmarked, 90 per cent of which is Federal funds. There will be 3,000 dwelling units, designed to house 12,000 families. The first units should be ready for occupancy in Feb. 1940.

The 36th International Art Exhibit was held in Carnegie Art Galleries from Oct. 13 to Dec. 4 Eleven nations were represented. "The Wind" by the impressionist Carl Hofer was awarded first prize. Hofer was the first German to have been awarded the Carnegie International first prize. On Nov. 24 was dedicated the Heinz Memorial Chapel on the campus of the University of Pittsburgh. The Pittsburgh Symphony Orchestra entered upon a new phase of its development by the acquisition of Fritz Reiner for permanent conductor.

The most significant industrial news of 1938 was the almost complete abolition of the inter-basing-point differentials—commonly known as "Pittsburgh plus"—a movement which was begun in 1924. Carnegie-Illinois' new Irvin Works was opened in December, thus marking Pittsburgh's entry into the motor-car and flat steel production business. The mill will employ 4,000 men and produce 600,000 tons of steel a year.

PIUS XI (1857–1939), Pope, Supreme Pontiff of the Universal Church since 1922 and Sovereign of the Vatican City since 1929, celebrated his 81st birthday on May 31, 1938, a few days after he had sent a message to the Eucharistic Congress, meeting at Budapest, thanking God that he was

alive to be a witness and to some extent a participator in the crises of the time, when "nobody has the right to remain neutral". As a temporal sovereign the attitude of His Holiness was strictly correct (*see* VATICAN), and as the successor of St. Peter he strongly supported "Catholic Action" against its international attackers, and never ceased to fulminate against chauvinism, the "curse of exaggerated nationalism", and the anti-religious propaganda and racial persecutions of the dictatorships, on one occasion (July 29) asking why Italy found it necessary to copy Germany in adopting a racial policy. He also on many occasions protested against the Nationalist bombing of governmental Spain, and that of the Japanese in China; and on Sept. 30, the day on which agreement was reached at Munich, he broadcast from Castel Gandolfo a world-wide appeal for prayers for the preservation of peace



Vandyk]

POPE PIUS XI

The Holy Father's health gave cause for some anxiety more than once during 1938, but his vigorous defence on Christmas Eve of the Lateran Treaties—allegedly broken in letter and spirit— and his reference to the appearance in Rome of the swastika—"a cross which is the enemy of the Cross of Christ"—at the time of Herr Hitler's visit, gave every evidence of well-maintained strength. He was taken ill once more in February, 1939, however, and died early on Feb. 10, two days before the tenth anniversary of the Lateran Treaties signature.

PLASTICS INDUSTRY. The year 1938 was marked by further broad increases in the manufacture of plastics throughout the world Because of the widely different methods used in each country to classify plastics, no really authentic figures can be obtained. However, with the statement that the figures are not too accurate, it is estimated that in 1937 (latest available estimate) the world production of plastics made from cellulose derivatives was 72,000 tons, and that of synthetic resin plastics 165,000 tons.

Although nitrocellulose plastics are still produced in considerable quantities, several of the newer thermoplastic materials are making deep inroads into this field: these are cellulose acetate and other cellulose derivatives, polymethyl methacrylate, polystyrene, and vinyl and acrylic resins. Perhaps the outstanding development was the introduction of a polyvinyl butyral resin safety glass interlayer of superior toughness. Vinyl resins and ethyl cellulose found use in wire insulation. Another vinyl resin, of rubbery character, became a substitute for rubber in flexible tubing and gloves. Polystyrene was used for dressing combs, drawing instruments, gauges, buttons, radio fittings, and as an intermediate in the manufacture of "Buna" rubber substitute.

The crystal-clear polymethyl methacrylate introduced in 1937 found many new uses, one interesting application being to replace the glass reflectors used in guide posts along the motor highways. Advantages over glass are relative unbreakability and better reflection, resulting from the ability to be moulded more accurately Its use in aeroplane windscreens was increased Its property of transmitting light through relatively long rods made it of value in illuminating devices used in surgery and dentistry, where glass cannot be used because of its fragility. Other uses were for acid pumps, filter plates and frames, in cable lacquers and ground coats for brushing lacquers, for the preservation of entomological specimens, and for dental plates It may eventually become the ideal dental plate material long sought by the world

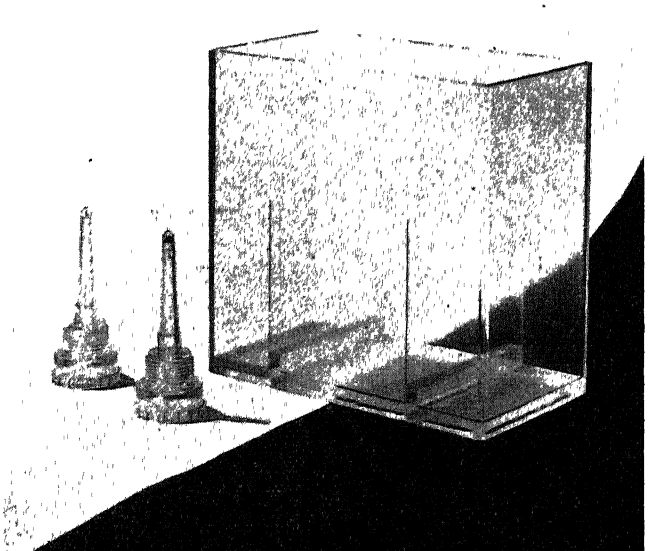
A considerable extension of the use of cellulose acetate moulding powder, notably in motor-car fittings, has been promoted by improvements in equipment for injection moulding. Increases in capacities of presses, to as much as 2·0 lb. per cycle, have made possible an increase in the number of mould cavities, and a corresponding decrease in labour cost per article, and have extended the application of the method to articles of larger size.

In the field of thermosetting resins, which is very much the larger in volume, new uses were stimulated in Germany because of the increased need to use domestic raw materials. One striking example is that of laminated phenol-formaldehyde to replace heavy bronze bearings. It is estimated that 2,500 tons was thus used in 1938

Other uses, only experimental as yet, were for aircraft and motor-car bodies. In some countries phenol-formaldehyde enjoyed an extended use for telephone sets, refrigerators, jewellery, electrical accessories, and radio cabinets, as well as for chemically resistant construction material, such as tiles.

In England a urea-formaldehyde of new type, having greater shock resistance and less water-sensitiveness, was used as the bonding layer for plywood boats. In France this material was utilized for table tops as large as 960 sq. inches, and also for cameras, large switch-boards, and decorative panels. In the United States it found new applications in lighting fixtures and for crease-proofing textile fabrics.

An entirely new type of synthetic material designated by the coined name "nylon" made its appearance in the United States. The uses for this material seem legion: it



Imperial Chemical Industries Ltd.]

BATTERY BOX AND VENTS MOULDED IN ONE PIECE FROM "DIAKON"

has already been produced commercially as a bristle for toilet brushes, and a plant for making yarn for hosiery is under construction. "Nylon" is characterized by extreme toughness and strength; it can be made into filaments as strong as iron and as fine as those in a spider's web, it possesses a beautiful lustre, and is more elastic than any of the common natural fibres.

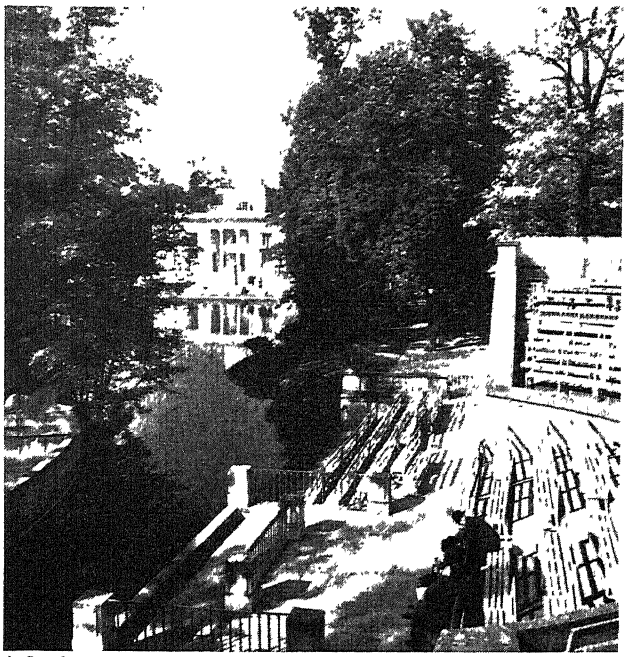
In Germany, and in Japan, other synthetic bristle materials have made their appearance. (*See* also CHEMISTRY, APPLIED; INDUSTRIAL RESEARCH: *Great Britain, Netherlands, United States*, PAINTS, VARNISHES, AND LACQUERS; RAYON; RUBBER AND RUBBER MANUFACTURE; TEXTILE INDUSTRIES; WOOL)

PLATINUM. No data have been published on the Russian platinum output since 1926, and data on exports are incomplete; since these figures vary widely from year to year, the world totals fluctuate accordingly, and do not represent a true picture of the industry as it is not known how much of the Russian shipments is from current production and how much from accumulated surplus stocks from previous years. The world supply in 1937 is estimated at 355,000 oz., an increase of 13 per cent over 1936

From 12,500 oz in 1929, the Canadian production increased to 139,400 oz. in 1936, with prospects for a further increase in 1938. The next largest producer is Colombia, with an output which has dropped in the past few years from 55,000 oz. to 30,000 oz. The fourth largest producer is South Africa, which had a high figure of 45,500 oz. in 1930, but averaged about 26,000 oz from 1934 until 1937, when it rose to 31,000 oz.; the production rate was reduced by one-half in Jan. 1938, but was brought back to the 1937 level by midyear, and during the third quarter was raised so high that a new high record for the year is assured. The United States output stands fifth in the list, the yield since 1935 having been boosted above the previous level by a new placer deposit in Alaska. In 1937 the recovery of by-product platinum was 4,760 oz; and of placer crude 10,000 oz., and it is anticipated that the latter figure may be doubled, or possibly trebled, in 1938.

POLAND. Situated at the heart of Europe, Poland was bound to feel the tension that has marked the whole of the year 1938. Fortunately land and people have escaped any signs of serious unrest; and they will look back on the year as one of the best in the history of the new republic. What with a sufficient harvest, a balanced budget, relatively normal political conditions, and a successful record in foreign relations, the outlook is better than many had courage to hope a year ago.

International Relations. Inside the framework of a general policy of benevolent neutrality toward her more powerful neighbours, Poland won three diplomatic successes in 1938. In March, consequent on an "incident" on the Lithuanian frontier, a protest amounting to an ultimatum was sent to Kaunas. The result was a settlement of difficulties that have existed for twenty years, and the opening to normal trade and travel of a boundary that could at any time have been the cause of serious troubles. Both countries benefit substantially by the new arrangements. In September, profiting from the situation that had arisen in Czechoslovakia, Poland pressed home her long-declared claims for the return of the Cieszyn (Teschen) area, which had been seized by the Czechs in Jan. 1919, after a settlement had been reached by the two peoples on the spot on Nov. 5, 1918. There followed the occupation of the ceded territory, with over 100,000 Poles in it, whose rejoicing knew no bounds. Some distance eastward, in the High



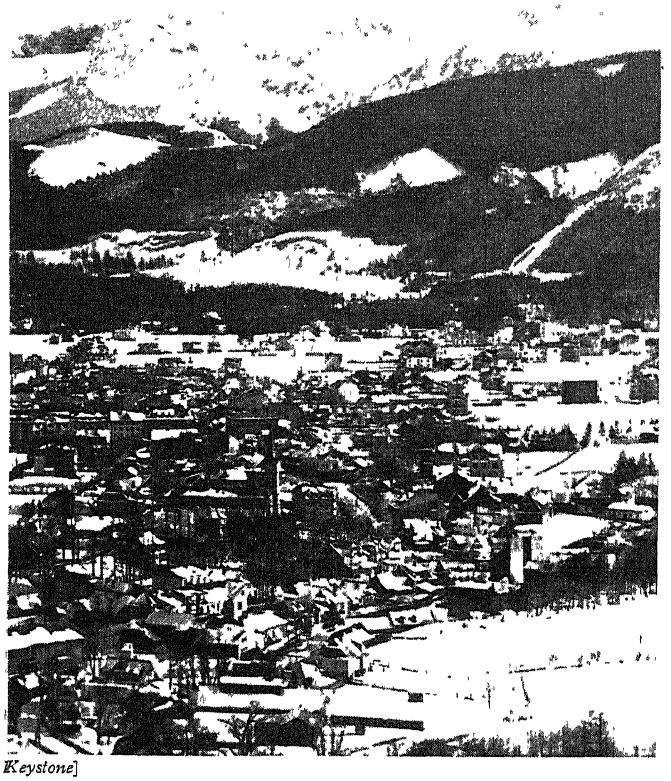
A. Costa]
WARSAW GARDEN AND OPEN-AIR THEATRE AT ŁAZIENKI. THE STAGE IS ACROSS THE WATER ON THE LEFT

Carpathians, other adjustments were also made; Poland receiving the northern slopes of the mountain range, which had been given to Slovakia in 1920 Finally, in November, news came of a reaffirmation with significant extensions of the Non-aggression Pact signed with Soviet Russia in 1932. This gesture of good-will helps materially in maintaining settled conditions in Eastern Europe.

Home Politics. There is no doubt that these successes helped the Składkowski government in work in Poland itself. The national elections held in November gave this government an unequivocal mandate for further work. Though held on the basis of the hated Franchise Law of 1935, they gave a two-thirds vote (in places four-fifths) for the administration. This was due in part to the good-will shown by the Catholic hierarchy. It is notable, too, that



A. Costa]
CRACOW. THE CATHEDRAL



[Keystone]

ZAKOPANE, IN THE HIGH TATRAS, POLAND

the minorities—Ukrainians, Jews, and Germans—gave an even higher percentage for the government than many Polish areas. Opposition parties maintained the boycott, as in 1935; but with much less effect.

The regular budget was balanced, but extraordinary expenditure was higher than in 1937. Much of it went for armaments, in particular the construction of the Central Industrial Region, south of Sandomierz. This will serve the whole nation; but will be a special benediction to densely populated areas, whence has come most of the peasant unrest. Owing to higher imports the balance of trade for the year was adverse, but not of dimensions causing concern. Prices of farm produce have been maintained, so that the purchasing power of agriculture has risen a little. Heavy industry had a good year, and the employment figures have been more satisfactory than heretofore.

Cultural Questions. School and church play a big part in Polish life. Special efforts have been made of late to recover the ground lost during the world depression in school building. In 1938, 3,620 new school rooms were put into service, about one-quarter more than in 1937. An important step forward in church matters was the conclusion, after years of work, of the Statute of the Orthodox Church in Poland. (The same thing had been concluded for the Protestants in 1937.) The status of a large body of believers was thus settled after a long interim.

(W. J. R.)

Area and Population:

Area (Jan. 1, 1938) 150,052 sq. miles; (Nov. 30, 1938) *c.* 150,820 sq. miles.

Population (est. Jan. 1, 1938) 34,534,000; (Nov. 30, 1938) *c.* 34,774,000.

Chief Towns (pop. est. Jan. 1, 1938): Warsaw (1,261,000), Łódz (665,000), Lwów (318,000), Poznań (269,000), Crakow (255,000), Wilno (208,000).

President. Prof. Ignacy Mościcki

Languages. Polish, 69 per cent, Ukrainian, 10 per cent, Yiddish and Hebrew, 8·6 per cent; and smaller percentages of White Russian, German, and Russian.

Religion. Catholic, 75 per cent; Greek Orthodox, 12 per cent; Jewish, 10 per cent.

Production 1937:

Wheat	1,926,200 metric tons
Rye	5,637,800 ,, ,,
Barley	1,303,400 ,, ,,
Oats	2,342,900 ,, ,,
Maize	103,100 ,, ,,
Potatoes	40,221,000 ,, ,,
Beet Sugar	506,700 ,, ,,
Coal	36,218,000 ,, ,,
Pig Iron	724,000 ,, ,,
Steel	1,451,000 ,, ,,
Artificial Silk	6,224 ,, ,,
Wood Pulp	163,000 ,, ,,
Paper and Paper Boards	243,000 ,, ,,

Labour:

Insured Workers. number (July 31, 1937) 2,350,000; (July 31, 1938) 2,582,000.

Registered Unemployed: number (Sept. 30, 1937) 251,400; (Sept. 30, 1938) 212,300.

Index of Industrial Production: (av. 1937: 1929 = 100) 108·6.

Index of Industrial Production: (av. Sept. 1938: 1929 = 100) 118·2.

Foreign Trade (in thousands of zlotys):

Imports, merchandise (1937) . . 1,254,300 zlotys

Exports, ,, (,,) . . 1,195,600 zlotys

(Jan.–Oct. 1937) Imports, 1,036,000 zlotys; Exports, 976,000 zlotys.

(Jan.–Oct. 1938) Imports, 1,082,000 zlotys; Exports, 946,000 zlotys.

Communications:

Roads, metalled (April 1, 1937) . . 37,689 miles

Railways, standard gauge (1937) . . 11,223 ,,

Airways, passengers carried (1937) . . 37,497

,, , length of routes (,,) . . 3,532 miles

Shipping, registered tonnage (Jan. 1, 1938) . 99,408

Finance and Banking (in thousands of zlotys):

Revenue (1937–38) 2,373,000; (est. 1938–39) 2,475,000.

Expenditure (1937–38) 2,335,000; (est. 1938–9) 2,475,000

Public Debt (Oct. 1, 1937): internal, 2,130,000; external, 2,632,000.

Notes in Circulation (Nov. 30, 1938) . . 1,373,000

Gold Reserve (,,) . . 442,000

Exchange Rate (av. 1937): 26·13 zlotys = £1 sig.

,, ,, (Dec. 12, 1938): 24·75 ,, = ,,

Education 1937–38:

Elementary: Schools, 28,722; Scholars, 4,851,500.

Secondary: ,, 777; ,, 221,200.

Miscellaneous:

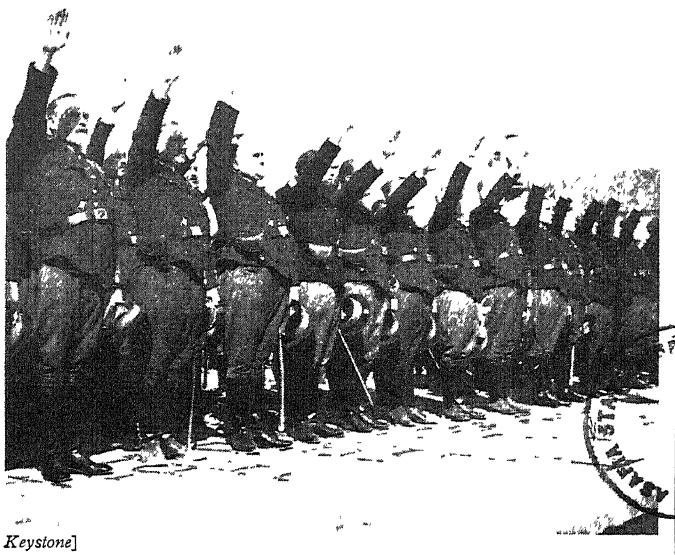
Motor vehicles licensed (July 1, 1938): cars, 39,253; cycles, 12,476.

Wireless receiving-set licences (Jan. 1, 1938) . 861,000

Telephones, number of subscribers (Dec. 31, 1937) 206,000.

POLICE. Air Raid Precautions have given a new prominence to that general function of the police which has been aptly described as that of handy-man to the community. In a survey of Air Raid Precautions in Great Britain, published by *The Times* in Dec. 1938, it was emphasized that the most efficient schemes were those directed by the police or with which they were most closely associated.

In the unhappy event of war, its totalitarian character under modern conditions means that the police, as the protectors of life and property, must take a leading part in the defence of the civilian population. This is necessary even in countries where "Passive Defence" comes under the control of the War or Defence Ministry and not, as in England and Wales, under the Home Secretary or a special Minister such as Sir John Anderson, the Lord Privy Seal.



Keystone]
VIENNESE POLICE TAKING THE OATH OF ALLEGIANCE TO HITLER AT THE TIME OF THE "ANSCHLUSS", MARCH 1938



Fox Photos]
FRENCH MOBILE GUARDS AT A "METRO" ENTRANCE IN PARIS DURING THE GENERAL STRIKE, NOV. 30, 1938

The new development is consistent with, though it imparts a new meaning to, the British policeman's traditional role of "peace officer". The regular police in London and other large cities are being strengthened by the voluntary enrolment of local citizens, who will be available in an emergency to serve in a police war reserve.

A rather novel use was made of the German police in March 1938, on the occasion of the Austrian *Anschluss*, when not only Herr Himmler and his secret police, but some 16,000 of the uniformed constabulary were collected from all parts of the German Reich and transported temporarily into Austria as adjuncts to the army and air force. After the *Anschluss* the Austrian police were reorganized on the German model in the two main divisions of (*a*) Constabulary and Gendarmerie (*Ordnungspolizei*), and (*b*) Security Police (*Sicherheitspolizei*), which includes the Secret Police (*Gestapo*) and the Criminal Police (*Kriminalpolizei*).

The police in Palestine have continued to encounter conditions of the greatest difficulty and danger. The campaign of terrorism grew into an armed revolt, and the task of coping with it had to be shouldered, to a large extent, by military forces in the autumn. The year closed with the shooting of Mr. Sanderson, Deputy-Superintendent of Police, in an ambush in which Major Brunskill, the Inspector-General, and Sir Charles Tegart, the Police Adviser, were involved but escaped uninjured.

Another part of the world in which 1938 had an unfortunate resemblance to 1937 was the British West Indies, where labour discontents in Jamaica, similar to those in Trinidad the year before, culminated in serious rioting and armed conflicts with the police in May and June. On the opposite side of the globe, the police of Burma were faced with grave and prolonged disorder arising from communal riots in Rangoon, Mandalay, and elsewhere.

In Europe, it was again a troubled year in France, but happily without bloodshed, notwithstanding the strikes in the metallurgical industries, the trouble among the dockers at Marseilles, and finally the abortive General Strike of Nov. 30. The *Garde Mobile*, specially formed in 1927 to deal with the civil disturbances and, like the *Gendarmerie*, placed under the direct control of the Minister of the Interior, has again proved its great value. There was a general opinion, however, that the stringency of the precautions taken to ensure the safety of King George VI and Queen Elizabeth on their visit to Paris in July was excessive and too like the kind of protection needed by dictators. The decision of the French government to withdraw firearms from the French police because of the shooting during the Fascist-Communist riots in Paris in March 1937 had to be abandoned in the face of the most strenuous protests from the police themselves.

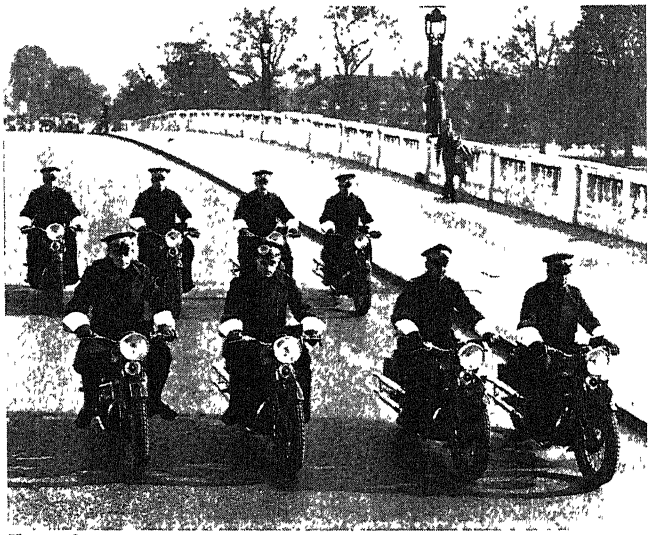
A notable piece of police organization was completed under British auspices in the Balkans in 1938, namely, the establishment of an efficient *gendarmerie* in Albania, a country previously devoid of any form of police. This force is now carrying on under its own chiefs.

As regards the success of the police in England and Wales in dealing with crime, it appears from the report of the committee on detective work that only ten per cent of crimes of violence and fifteen per cent of frauds, false pretences, etc., remain undetected, whereas fifty to sixty per cent of house-breakings and thefts are not cleared up.

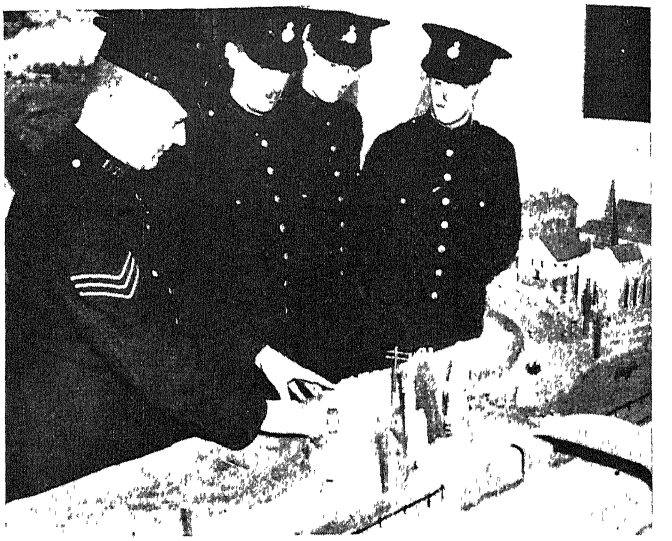
A case occurred at the Croydon Quarter Sessions in Jan. 1938, which mistakenly received world-wide notice as one in which a finger-print had been "forged". A prisoner, whose finger-print had been found on a bottle at the scene of the crime, contended that the impression had been "simulated", *i.e.* placed there by somebody else who had surreptitiously obtained an impression of his finger and transferred it to the bottle. The practical impossibility of such a thing being done is obvious to anyone with any knowledge of finger-prints, and the only remarkable feature of the case was that the jury were apparently impressed by a futile demonstration by the prisoner that a finger-print could be impressed on wax and then reproduced, but reversed of course, on a piece of glass.

The finger-print system, which was adopted by Scotland Yard in the first year of this century, remains unchallenged as the conclusive method of establishing personal identity, and this is recognized by courts all the world over.

There have been important decisions affecting the Police College at Hendon which was founded by Lord Trenchard in 1934. Hitherto it has been only a part of the Metropolitan Police organization with a few Colonial cadets. In future it is to provide increased facilities for students from the Empire, and is also to train men from the county and borough forces of England and Wales. Further, those selected for admission to the college from outside the police force will in future have to do at least a year's service as constables in the force before going to the college. Another



Keystone]
A PATROL OF THE SPECIALLY TRAINED "COURTESY SQUAD" OUT ON THE KINGSTON BY-PASS NEAR LONDON



Fox Photos]
LANCASHIRE POLICE RECRUITS BEING GIVEN A ROAD-SAFETY LESSON WITH THE HELP OF A MODEL ROADWAY

alteration is that the higher ranks (*i.e.* above that of inspector) in the Metropolitan Police will not be limited to those who have successfully passed through the college, but will be open to all members of the force.

The regulation of traffic on the roads continues to occupy a very large part of police time. In Germany the police, it was announced, are to reduce the alarming total of casualties (given as 8,000 killed and 175,000 injured in a year) by new powers to administer punishment on the spot In addition to the power of fining offenders (unknown in Great Britain but used with certain safeguards in the U.S.A), the German policeman can now confiscate a motorist's licence for any period up to three months, or, in minor cases, give him time for reflection by deflating his tyres

In Great Britain police action in regard to traffic offenders continues to be more on educative and preventive lines, but perhaps too much stress is generally laid on the importance of having "Courtesy Cops" and too little on the lack of courtesy among road users. Statistics relating to the experiment carried out in Lancashire of increasing police supervision on main roads showed a reduction of 46 per cent in accidents, as compared with an average reduction of only five per cent in the rest of the country during the same period of six months; but the problem on main roads is necessarily different from that of the streets of cities.

The International Police Commission, which has representatives from nearly all European countries, held its fourteenth Annual Meeting at Bucharest in June 1938, in rather unusual circumstances. As a result of the *Anschluss* of March, the chairmanship had passed to Herr Otto Steinhausl, a member of the Nazi party, who had been released from prison and appointed Police President of Vienna. Herr Steinhausl, however, had previously been a member of the Police Presidium in Vienna, the permanent headquarters of the Commission, and the proceedings under his chairmanship were characterized by the usual atmosphere of friendly co-operation, the President stressing the intention of the German authorities to carry on its work in the spirit of the founder, the late Dr. Schober, Police President of Vienna and Chancellor of Austria.

The main purpose of the Commission continues to be that of bringing about closer relations between the criminal police of the various countries of Europe and pooling knowledge as to modern developments in the methods both of police and criminals. The 1939 meeting is to be held at Berlin, and will be coincident with the opening of the new German police headquarters there.

See also CRIME; JUVENILE DELINQUENCY, PENAL REFORM. (J. F. Mo.)

POLICY OR NUMBERS RACKET, a form of gambling, especially among Negroes, which in New York City alone has been estimated to involve money amounting in a year to $20 millions or some such large sum. According to typical procedure, a person chooses any number from 100 to 999, writes it with his name on a slip of paper folded around a cent, a nickel, a dime, a quarter, or some such usually small sum. Collectors deposit these wagers in "banks", which may receive as much as $10,000 in a day. A "hit" (winning number which agrees with another in a designated place, such as a financial statement) yields $60 per dime or 10 cents of which $6 is retained by the collector. The actual odds are $100 to a dime, which leaves $40 per dime as margin for the "bank". According to evidence in the Hines case (*see* TAMMANY HALL), the odds may be increased against the wager by unfair manipulation.

POLIOMYELITIS: *see* INFECTIOUS DISEASES, ACUTE.

POLISH LITERATURE. Four veterans in the realm of arts and letters died in 1938: Alex. Swiętochowski, who fifty years ago was the champion of realism in thinking and in politics; Alex. Michałowski, who was Paderewski's teacher; Teodor Axentowicz, a master painter of portraits, and Marjan Zdziechowski, philosopher and cultural historian. A selection of notable publications would include the following: Vol. IV of the *D.N.B.* (from Chwa-Dąbr); a sumptuous life of Copernicus by J. Wasiutyński; the Letters of two pioneer patriots of the pre-war days—Eliza Orzeszkowa, the first woman novelist of distinction, and Zygmunt Miłkowski, who founded the Liga Polska in 1886. Literary criticism has Juliusz Kleiner's *W Kręgu Mickiewicza i Goethego* ("In the Range of M. and G."), folk-lore Bystroń's *Księga imion w Polsce Używanych* ("Book of Polish Names"). New novels of note are Kossak-Szczucka's *Bez Oręża* ("Without Armour"), a tale of Francis of Assisi; T. Kudlinski's *Uroki* ("The Charms"), a tale of Napoleon and Poland; Pola Gojawiczyńska's *Słupe Ogniste* ("Pillars of Fire"), which deals with peasant life; and a striking first novel by Czuchnowski *Pieniądz* ("Money") on the same theme. In general the "folk" motif continues to be strong in all forms of art, a good thing for a still largely rural civilization. (W. J. R.)

POLITICAL MIGRATION AND REFUGEE MOVEMENTS. Migration due to political and religious persecution, already a considerable international problem, assumed more serious proportions in 1938 Anti-Semitism in Germany was carried to greater lengths, and the anti-Semitic legislation and practice of the Third Reich was extended to Austria after the annexation in March and, with minor exceptions, to the Sudeten areas taken over from Czechoslovakia in October While conditions for Jews worsened, emigration became more difficult because the already restricted possibilities of taking even personal belongings out of Germany or of realizing outside Germany assets held in that country were reduced to vanishing point. The mass of those who left were penniless That the emigration was not greater than it has been was largely due to the defensive measures adopted by limitrophe countries against the pressure on the frontiers of masses of destitute persons. The visa system was strictly enforced and frontier guards were strengthened. In spite of the closing of frontiers against all who were not supplied with visas many thousands crossed the frontiers illegally Some were sent back, others lived an illegal existence, and in the latter half of the year some were placed in temporary camps pending the possibility of moving them on. For the first half of the year the High Commissioner of the League of Nations was able to report that in spite of all difficulties of finding outlets overseas the number of persons in refuge in European countries remained fairly constant at about 35,000, the rate of departures being practically equal to the rate of arrivals Austrians alone accounted for about 15,000 admitted in due form, but this figure took no note of the number of illegal infiltrations. Though immigration to Palestine was reduced it remained an important country of refuge, and entries into the United States accounted for over 14,000 persons in the first nine months of the year. Though the emigration was largely Jewish there was a substantial Catholic element. In the autumn the pressure to leave Germany became much more severe and the difficulties of effective closing of frontiers increased In November the monthly average of new arrivals dealt with by a Paris charitable committee alone was 133 from Germany and 936 from Austria. In Great Britain, with strictly regulated entry at the ports, the numbers greatly increased, in addition to the admission of over 2,000 children While Jewish emigration was proceeding at the rate of 22,000 to 23,000 a year it was possible for the Jewish organizations to secure an orderly exodus and to provide some retraining for overseas emigrants. These arrangements were overwhelmed in 1938 by the larger numbers involved and by the impoverishment of the Jewish community in Germany owing to the confiscatory policy pursued Moreover increasing restrictions on Jewish immigration were enforced in overseas countries. Many thousands of Polish Jews were expelled from Germany in October at a few hours' notice, and of these some 6,000 were still existing in the no-man's land on the frontier in wretched conditions in January 1939.



Keystone]
POLISH JEWS EXPELLED FROM GERMANY, AT ZBONSZYN ON THE POLISH-GERMAN FRONTIER, NOV. 1938



Planet News]
SPANISH REFUGEES FROM CATALONIA ON THE ROAD TO PERTHUS, THE FRENCH FRONTIER VILLAGE, JAN. 1939

The confusion caused by the attack on Jewish organizations in Germany in November after the murder of vom Rath in Paris by a Polish Jew makes it impossible to give any close estimate even of Jewish emigration. Organized emigration by Jewish societies accounted in the first ten months of the year for 8,000, obviously only a very small proportion of the total, and for some thousands of Jewish and "non-Aryan" children, mainly from Vienna, in the later months. The heavy reduction noted in the Jewish communities by the end of 1938 is partly accounted for by a heavy death-rate and a vanishing birth-rate, partly by difficulties of registration, but in the main by emigration. According to Dr. Arthur Ruppin's estimate, the reduction in the number of Jews in Austria after the *Anschluss* was 35,000 by emigration and 5,000 by natural decrease; the corresponding decreases for Germany for the whole year 1938 were 30,000 by emigration and 5,000 by natural decrease. These estimates do not cover "non-Aryans" and others, for whom no accurate estimate is available.

Under these conditions the work of the High Commissioner for Refugees of the League of Nations, who is concerned mainly with the legal protection of stateless refugees, and of the Inter-governmental Committee in London, convened originally at Evian in June by the President of the United States, was exceedingly difficult. The High Commissioner's task was simplified to some extent by the coming into force of the Convention signed at Geneva in 1938, which is applied in practice by some States, for example the United States, who for technical reasons did not sign it. The functions of the Inter-governmental Committee were to procure orderly emigration from Germany and to arrange for the reception of migrants in countries, mainly overseas countries, where they could settle permanently. This meant simultaneous negotiations with the German government to secure if possible the transfer of some part of the emigrants' property or compensation in one form or another, and with the countries of permanent refuge for their reception. The United States quota (23,370 persons)

was by the end of the year filled for the next two years. Some offers were received from British Dominions and South American countries, but not on a scale sufficient to meet the emergency. It was not until January 1939 that the Director of the Inter-governmental Committee, Mr. George Rublee, was able to go to Berlin to begin negotiations with the German government.

At the time of the annexation by Germany of the Sudeten areas of Czechoslovakia there were in the country some 5,000 refugees from the old Reich and from Austria, about 2,500 illegal entries having been effected from Austria, largely on the basis of passports marked "entitled to return" but in fact not valid for return After the annexation many thousands of Sudeten Germans and Czechs fled from the occupied territories. Some 20,000 were sent back and about 10,000 returned of their own accord. Official figures of refugees in Bohemia and Moravia alone, published by the Czechoslovak government on Nov 16, showed: Czechs 72,912, Germans 10,817; Poles 194; Jews 6,765; others 1,271. There were further movements in December from the districts occupied by Poland and Hungary In January 1939 it was stated that arrangements were being made for the emigration of some thousands of Jewish refugees, the necessary foreign exchange, to be made good by Jewish organizations, being provided out of the British loan. Other arrangements were in progress for the emigration of non-Jews, in addition to those already received in the United Kingdom and other countries.

The Spanish civil war led to large evacuations in 1937 of population from the areas occupied by the Nationalists, partly to France and partly to government Spain By 1938 a large number of adults had been repatriated from France. When further movements occurred, as in March and April 1938 (when at one French mountain centre, Luchon, 6,000 militia men and 2,000 civilians were received from across the Pyrenees), the able-bodied men were at once repatriated, mainly to government Spain, and the sick and the young allowed to remain. In August 1938 the Catalonian government estimated that there were two million refugees in government Spain, and this number was increased in the autumn by fugitives from the Catalan provinces occupied by the Nationalists. The repatriation of volunteers serving in the International Brigade in government Spain was difficult of execution, and the Germans and Italians concerned remained for the most part in France.

A decree providing for the expulsion of foreign Jews



Planet News]
YOUNG JEWISH REFUGEES FROM GERMANY AT AN ESSEX HOLIDAY CAMP, DEC. 1938



Associated Press]
CHINESE REFUGEES RESTING ON THEIR WAY TO HONG KONG FROM KWANTUNG PROVINCE, INVADED BY THE JAPANESE

settled in Italy since the War was issued on Sept. 1, 1938, migration to take place by March 1, 1939. The decree probably affected about 20,000 persons, but it is not known how many have left. The decree did not apply to Italian East Africa, and it was expected that some foreign Jews would move to that area, included within the Italian currency system; East Africa would therefore be faced with the difficulty of procuring foreign exchange.

The unmixing of populations in the Near East begun after the Great War continued. The most important movement was into Anatolia of Turks, who have been transferred from Balkan countries at the rate of about 30,000 a year. In June 1938 the Turkish government announced their intention of repatriating a million in the next five years, mainly from Yugoslavia and Rumania. Arrangements are made by which these migrants can take with them a certain amount of property, and the official Turkish organization concerned has little difficulty in settling them on vacant land.

The movement eastward in the U.S.S.R. is mainly economic in character, but the shift is encouraged for political reasons, one of them being the strengthening of defensive power in the Far East. The development of the Jewish Autonomous Area of Biro-Bijan was in abeyance, Jewish immigration having made no headway partly on account of political uncertainties in the area.

Probably the largest political migrations in 1938 took place in China, but there is no exact information as to their extent. They were a continuation of the great movements which began with the Japanese occupation of Northern China. The migration from the northern and eastern provinces westward is certainly large, but there are no means of estimating what part of it is likely to be permanent. The economic and political effects of the change in the redistribution of the balance of population are bound to be far-reaching. The Central Emergency Relief Commission at Hankow estimated in February 1938 that ten million people had fled from their homes in Northern China and that half of these were destitute. Since that time the cutting of the dykes of the Yellow River and the consequent floods have driven millions of people from their villages. The Chinese government's National Relief Commission has set up stations along the main routes to secure as far as possible orderly dispersion.

See L. of N., *Refugees coming from Germany*, Aug. 22, 1938, A.25, 1938, xii; and Sir John Hope Simpson, *The Refugee Problem—Report of a Survey*, Oxford University Press, 1939.

(M. B.)

POLITICAL PARTIES. Burke defined party as "a body of men united for promoting by their joint endeavours the national interest upon some particular principle in which they are all agreed". All parties, on this view (which is stated at the end of the *Thoughts on the Cause of the Present Discontents*, written in 1770), are united in promoting one and the same "national interest": they simply differ in the "particular principles"—the particular choice among various ends, or the particular preference for means—upon which they seek to promote that interest. On this view, again, a party represents a current of social opinion: it is a body of men, in the social area, who are voluntarily united, like other clubs or groups in that area, by an agreement in certain principles and a desire to act upon those principles. Another definition of party, which appears in Dr. Lowell's book on the *Government of England*, published in 1908, envisages party as "a body of men united by the intent of sustaining a common ministry" (vol. 1, p. 460). In this definition the emphasis is laid, not so much on society, or on the function of party as representing a current of social opinion, as on the State, and on the function of party as contributing to and co-operating in the operation of the State. It is possible to combine and extend these two definitions. Allowing weight both to society and to the State, and considering the relation of party, in the area of the State, not only to the ministry or cabinet, but also to the electorate and to parliament, one may define party as "a body of men, forming a voluntary association in the social area, and representing a current of social opinion, which seeks to affect the operation of the State—first by formulating a political programme expressive of the current of social opinion which it represents; secondly, by presenting to the electorate candidates who stand for that programme; and thirdly, by returning to parliament a majority of members who will carry the programme into effect through the agency of leaders supported by them in the capacity and office of a ministry".

It is a long definition, which is perhaps exhausting without being exhaustive. It certainly omits one element, at any rate, of English practice, which ought not to be forgotten. This is the element of the opposition—the other party, or combination of parties, which is united by the intent of opposing, and if possible evicting, the ministry in power. Any conception of a party system, in the strict and proper sense of the word "system", demands a plurality of parties and a polarity, or tension, between confronting parties. A party is etymologically, and essentially, a "part". It needs other parts, or parties, if a system is to be constituted. When a system has been constituted, and when, in the working of that system, one of the parties has advanced to a position in which it can put its fingers on the levers of power, it follows logically that the other party, or combination of parties, will advance to a corresponding position in which it criticizes, and seeks to modify, the use of the levers. This development fulfils a principle of politics of which many thinkers have spoken, the principle of balance; and when it has taken place, party is able to discharge, not only the function of Direction, but also what J. S. Mill called the function of Antagonism, "the antagonism of influences which is the only real security for continued progress". From this point of view it may be said that a method of government which is based on the party system (in the strict and proper sense of that term) is a method by which a cabinet *in esse* is confronted, criticized, and even checked by a cabinet *in posse*. The use of this method meets, and overcomes, the great difficulty of democratic, and indeed of all, government, the difficulty (as it was expressed by Mill) of providing "a *point d'appui* . . . a protection, a rallying point, for opinions and interests which the ascendant public opinion views with disfavour".

It would be wrong, however, to base a theory of party exclusively on considerations of government, and thus to place it entirely in the area of the State. In our definition of party we noticed that party originally begins (and we may add that, whatever new functions it acquires, it always continues to exist) as a voluntary association, in the social area, which expresses a current of social opinion. It is a later development which makes party also a political organ, discharging political functions. The two aspects of party—the social and the political—have always to be remembered. But it is not always easy to accommodate the different requirements of these two different aspects. If we regard party from the social point of view, we shall say that it is right and proper that there should be as many parties as there are different currents of social opinion. On this it will follow that we shall accept, as a natural and even a necessary growth, the existence of a multiple party system *wherever the currents of social opinion are multiple*. To prune parties down to two would be, under such conditions, a mistranslation, or even a falsification, of social thought It would condemn candidates to stand on a colourless "lowest common measure" of agreement; it would condemn electors to vote for something other than their conviction. But if we regard party from the political point of view, as a force which acts in the sphere of the State and determines (or at any rate influences) the methods of the State's operation, we shall come to a different conclusion. We shall believe in two parties at the most: we may even believe in a single party. If we hold that there are *two* functions to be discharged in the sphere of the State, the function of Direction and the function of Antagonism, we shall desire one party for the one, and another for the other; and we shall argue that if more than one party is concerned with the function of Direction, or more than one with the function of Antagonism, the discharge of the function will be impeded. If, on the other hand, we hold that there is only *one* function to be discharged in the State—the function of Direction, or Leadership—we shall desire only a single party; and if, by force or good fortune, we achieve our desire, we shall set our single party, not only to operate the State without criticism or check, but also to work back upon society (the society from which party itself originally springs), and to mould society, with all its different opinions and interests, into a single unit of thought and will.

It is not easy to reconcile the conflicting considerations which emerge according as party is considered from the social or from the political point of view. The balance struck will depend on the view which we take of the rights, or claims, of society and the rights, or claims, of the State. If we attach weight to the claims of society, to liberty of social thought and the play of social discussion, we shall respect and even admire the multiple party system of France. If we attach weight to the claims of the State, but at the same time feel, as Anglo-Saxons tend to feel, that "there are always two sides to a question", we shall admire a two-party system which allows for the presentation of both sides (and in that sense, and to that extent, recognizes a difference of currents of social opinion), but does so without embarrassing the State by the riches of too great a variety. If we attach an *exclusive* weight to the claims of the State, as the one and only body to which we belong and by which we are moved, it might seem logical that we should abnegate the

very notion of party, which implies a division into parts and a difference, or even opposition, between the parts. It is indeed one of the paradoxes of contemporary politics that the word party should be applied at all when the party system, and all the ideas which it implies, have been eliminated. The single party is not a party. It is a relic of the system of party divorced from the system, and thus transformed into something new and strange

The single party, which destroys the system of party, is itself a product of that system Its emergence is evidence of a disease to which party is prone ; and since disease throws light upon the conditions of health, and pathology affords some insight into physiology, it is important to study the evidence presented by the emergence of the single party. We often speak of " party warfare ". It is a metaphor, but metaphors can be easily pushed into facts. When, among a number of parties in a country, one (or more) allows itself to be tempted to the pursuit of two extremities—first, the extremity of engulfing adherents totally in the internal life of the party, so that their one and only allegiance, for every purpose, is their party allegiance ; and secondly, the extremity of leading adherents, in their relations to other parties, into a struggle *à l'outrance* designed to exterminate any party other than their own—the metaphor of party warfare is translated into the fact of war. In the war between parties, one residuary victor is left ; and this victor is the single party, which has ceased to be a party and become a totality. The moral which is suggested by this pathological development is simple. If parties wish to survive (and the desire for survival is natural to any organization) they will refrain from both extremities. They will recognize, in the first place, that their adherents so belong to them, and so far owe them allegiance, that they also belong to other groups (churches, trade unions, and the like) and also owe allegiance to them. They will recognize, in the second place, that their struggle with other groups is a struggle of argument and not of force, and that a struggle of argument has to be conducted with a view to some sort of agreement and the attaining of some compromise. (" Compromise " is a word which sounds harsh and repellent in the ear of the convinced and doctrinaire partisan, who stands for the whole doctrine and nothing but the doctrine. But there is always a common " national interest " as well as the divergence of " particular principles " ; and a douche of cold common sense is sufficient to teach men that a spirit of transaction is necessary if the national business is to be transacted effectively.) The recognition of these two limits, which are limits set by the very nature of things—in other words, by the actual facts of social life and the actual conditions of peaceable political action—is imposed upon any party system which wishes to preserve its health, or even its existence. In particular the limit of compromise is a primary and essential necessity.

The course of the argument, and the facts of the contemporary world, combine to present us with three main types in this matter of political parties. There is the type of the multiple-party system, which has been current on the Continent, and is exemplified in France. There is the type of the two-party system (or of an approximation to that system—for there are always tendencies, passing or permanent, to increase the number beyond two) which is current in Anglo-Saxon countries. Finally, there is the type of the single-party system, if it may be called a system, which has appeared during the last twenty years in Russia, Italy, and Germany.

(1) In France, always passionate about doctrine, at any rate since the great Revolution of 1789, it is currents of social opinion which are particularly reflected in party. Two issues of the past, which are still living in the present, determine the nature and direction of those currents. The first issue is that which was raised by the Revolution of 1789 Are you for or against the principles of 1789 ? If you are for those principles, you will belong to the Left, you will be anti-clerical (but not anti-religious) and anti-privilege ; you will join the peasant and artisan against the manse and the manor-house. If you are against those principles, you will belong to the Right ; you will stand for the idea and practice of social authority ; you will be allied with church, nobility, and the bourgeoisie, especially the upper bourgeoisie. If you desire to follow a *via media*, and to be both for and against, or neither for nor against, you will gravitate towards the Centre, but you will find it hard to remain permanently there, because you are on the top of a slope, with a tendency to go down on one or the other side Then there is also the issue which was raised by the Revolution of 1848. Are you for or against the principles of 1848—the cause of labour, the rights of the masses, the principle of socialism ? Here again you will trend to Left or Right or Centre, according to your answer ; but the Left will be a somewhat different Left, and so too will the Right and the Centre. The currents of social opinion not only split : they also cross ; and the result is a little bewildering It has been said of the Frenchman by M André Siegfried (whose *Tableau des Partis en France*, of the year 1930, is still stimulating), " son cœur est à gauche, mais sa poche est à droite . . . et en pratique chaque français a une poche ".

So far, and if we regard only currents of social opinion, it may be said that France has only three parties, but with a double issue for each of the three. But we have to go beyond currents of social opinion. The French parties which reflect currents of social opinion flow in the country-side ; they are vigorous among the constituencies and in the electorate But what of parties in parliament—parties in the sphere of the State and the orbit of the State's operation ? Here we come upon a curious fact. The parties in parliament are different from those in the country-side, and more numerous than they are ; but they are also related to those in the country-side. These parliamentary parties are formed *after* an election, when a deputy takes his seat and " inscribes " himself. He may have been elected as a representative of the general tendency of the Left ; but he has a choice of some four or five different parliamentary parties all professing (if in different ways) to represent that tendency. The same is true of the Centre, and even of the Right. There will thus be about a dozen parliamentary parties, roughly classified under three headings which correspond to general tendencies. But this may not be all. There may also be a parliamentary group of Communists which holds itself apart even from the Left ; there may also be a group of *non inscrits*—members who have not inscribed themselves, and who act together as a group on the principle and the ground of belonging to no group.

How the operation of the State is affected by the peculiar structure of French parties is a matter too large to be discussed here. It is sufficient to say that the difference of the French structure of parties from the English structure involves a different system of parliamentarianism, which corresponds to the genius of France, and has its own rights and titles. One point should be added in further explanation of the French structure. The great country-wide

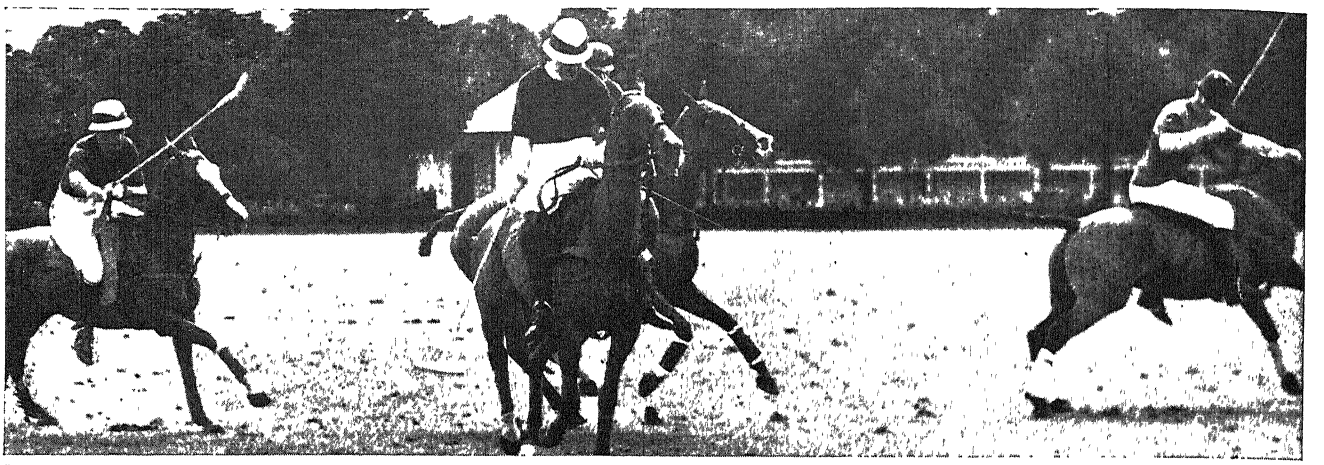
parties (or tendencies) of Left, Centre, and Right are not organized bodies with regular national leaders and a regular administration. They are tendencies rather than organized parties, just as the parliamentary groups may be said to be organized parties rather than tendencies. The whole presents the picture of a living complication, as fascinating to study as it must be difficult to operate. But at any rate it may be said that parties in France are far from being subdued to political exigencies

(2) In Anglo-Saxon countries there is nothing of the French distinction between parties which are tendencies of national opinion rather than parties, and parties which exist exclusively in parliament. The general trend, alike in the U.S.A. and in the States of the British Empire, is towards an identification of tendencies of national opinion with the parties in Congress or Parliament. The general trend sets also in the direction of two main organized parties, each with its national leaders, the one supporting and the other opposing the government of the day. In Great Britain this latter trend does not prevent the emergence, or the survival, of third parties, or even of small groups which can hardly be classified as parties; but it remains the dominant factor. The pull towards two "sides" (and two sides only) is decisive; and this pull draws every party or group which expresses a current of social opinion into the active and practical duty of supporting or opposing government. This centripetal influence, drawing all men towards one or other of two possible centres, reduces the multiplicities of opinion; it produces a constant pooling of differences up to the point where the plain difference between A and B alone remains. If we ask what constitutes the difference between A and B under these conditions, it is not enough to say that A is the government and B the opposition. There is something more—something for which the government stands, and the preference of which by the electorate has made it the government, and something for which the opposition stands, and which gives the opposition its measure of support. It would appear that this something else is fundamentally a current or tendency of opinion about the proper rate of progress. It seems trite and banal to refer the *fundamentum divisionis* of parties, in Anglo-Saxon countries, to so simple an issue. It is also a folly to forget that issues connected with the past still matter, and that as French parties were formed on issues raised in the Revolution of 1789, so English parties were formed on issues raised in the Revolution of 1688. But 1688 is farther back than 1789; and the issues of 1688 long ago ceased to trouble English life, while the issues of 1789 are still alive in France. It is not, after all, either trite or foolish to refer the divergence between English parties to a difference of opinion about the pace at which things should be done and the rate at which change should be made. The divergence between the Conservative and the Labour party is less a difference about property than it is a difference about progress. Both agree that, in a practical world (the world in which the Anglo-Saxon naturally lives), changes and adjustments have to be made in the existing system of property. The one would make the changes by a tentative experimentalism; the other believes in the rapid *élan*. The result tends to be a rhythm in the national life, by which first the one and then the other has its chance. There is thus not only a balance, at any given time, between Direction and Antagonism, but there is also a balance, over a period of time, between progress by slow movement and progress *à grande vitesse*.

(3) Something has already been said, in the previous course of the argument, about the origin and the nature of the method of government by the single party—the Communist, the Fascist, or the National Socialist. Here the role of party has been entirely changed. Instead of being the mediator between social thought and political action, party becomes the dominator of both. Instead of translating different currents of social thought—and thus leaving room for the function of Antagonism as well as for the function of Direction, and again for periods of slow movement as well as for periods of rapid change—party now forces social thought to run in the one channel which it prescribes and permits, it remits political action entirely to the force of Direction, or Dictation, or Leadership, it makes progress (so long as the single party lasts) constantly galvanic and electric. The single party has the advantage of the single direction and the rapid *coup*; and with that advantage it may overhaul the life of a country, alter its structure on the equalitarian and uniform lines which correspond to its genius, and thus introduce sweeping policies of social reform. It pays the price of a monotonous uniformity of opinion (manufactured and standardized opinion), and of the absence of any balance, or factor of compensation, in the working of the political machine. Whether a State can continue to exist in the absence of any factor of compensation is a thing which has still to be seen. The experience of the past would suggest a negative answer. But experience may well be puzzled by some of the phenomena of our age.

The single party, as we have already had reason to notice, is not a party in any usual sense of the word. It has an exclusive legal title to existence, conferred by itself upon itself; it has a close and controlled membership, which may indeed run to two millions or more, but which is strictly regimented by a central and guiding directorate; it is enthroned, under that guidance, above the State and its officers on the one hand, and above society (or the *Volk*) on the other. Its nature has been expressed by a German theorist (who speaks for his own country, but remarks that the general theory is true of Fascist Italy and even of Bolshevist Russia) in the following terms: "It is a party, sustaining State and Society (*Volk*), which recruits itself from all sections of society, but has a close membership and a hierarchical control, because it needs particularly a firm structure and a strong leadership. . . . It is designated by sociologists as an 'Order', or 'Elite', or in similar terms, to distinguish it from the political parties of the liberal State, which by their nature have no firm organization, but depend upon free recruitment. But the usual name of party may still be retained" (Dr. Carl Schmitt, in a pamphlet entitled *Staat, Bewegung, Volk*, p. 13).

We may be reminded by this language of the designation, "Vocation of Leadership", which has been applied by the Webbs to the Communist Party of Russia. We may also be reminded of their comparison of that party to a religious Order (*Soviet Communism*, pp. 340, 348, 1131). Cunninghame Graham wrote of Paraguay, as Paraguay was when it was governed by the Jesuits, under the title of "A Vanished Arcadia". Perhaps there is also Arcadianism in a view which sees in the single party something of the nature of a religious Order. May it not also be called a society of "bosses"? Has it not realized the dream which may naturally have been dreamed by the leaders of Tammany Hall—that there should be no party but my party, and my party should control, through me, all patronage, all politics, and all life? The question may appear extravagant.



Sport & General]
THE FINAL OF THE KING'S CORONATION CUP AT RANELAGH, SEPT. 9, 1938 THE TEXAS RANGERS, WHO WON BY 8 GOALS TO 6, PICK UP THE BALL FROM A MISS BY THE JAGUARS

But the comparison is also extravagant. A religious order exists by the side of other religious orders : it exists under the church in which it is set, as that church exists under the revelation which is its guide. A totalitarian single party has nothing by its side, and nothing over its head. At its best it imposes a *Weltanschauung*, or "General Line", or *Dottrina*, made by itself, on every department of life. At its worst it monopolizes office and manipulates patronage.

(E. B.)

POLO. Undoubtedly the greatest draw in England and the most successful team during the 1938 season was Mr. C. B. Wrightsman's Texas Rangers, composed, when at full strength, of Messrs. C B. Wrightsman, Cecil Smith, Aidan Roark, and E. H. Tyrrell Martin. On their first visit, in 1936, they won the Whitney Cup at Hurlingham, and the Handicap Cup and Invitation Cup at Ranelagh. In 1938 they won the Champion Cup at Hurlingham, the Open Cup and the King's Coronation Cup at Ranelagh, and the Open Challenge Cup at Roehampton.

The Hon. Keith Rous's Jaguars team, which did so well in 1937, had to be content with the Broomhouse Cup at Hurlingham and the Colts' Cup and Buenos Aires Cup at Ranelagh, though they were runners-up in various open competitions. Colonel Sir Harold Wernher's Somerles House team came next with three successes—the Ashton Cup (Hurlingham), and the Roehampton and Shaw Cups at Roehampton. Captain Lord Louis Mountbatten's Adsdean team won the Whitney Cup and the Visitors' Handicap Tournament.

The Royal Scots Greys' team, in which Captain Guinness was the outstanding player, won the Inter-Regimental Tournament. The Empire Cup was won by a Hurlingham side, which beat an Ireland side ; and at the Indian Empire Garden Party the Indian Princes' Challenge Shield was won by an Indian side, which beat Mr. Wrightsman's Texas Rangers team, representing "The World", by eight goals to seven after extra time. In the Inter-University match Oxford beat Cambridge by eight to four.

There are about fifty polo clubs in England, outside of the three London clubs, and there are just over 1,700 players on the Hurlingham Official Handicap List.

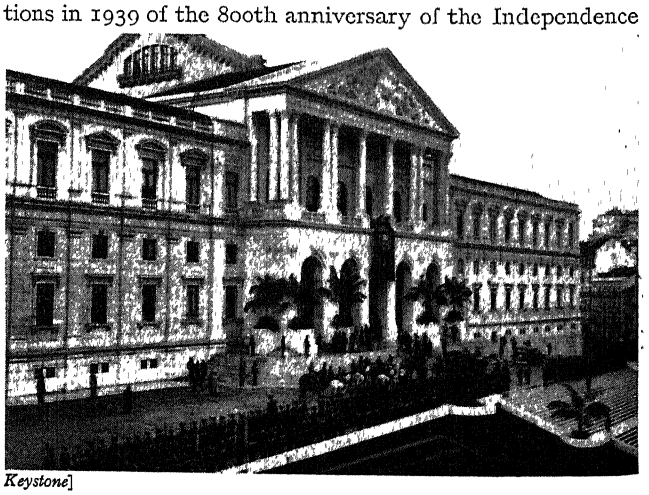
United States. The National Open championship and Monty Waterbury Memorial Cup, held at the Meadow Brook club, Westbury, Long Island, were the feature tournaments of the polo season. The Old Westbury team of Michael G. Phipps, Cecil Smith, Stewart Iglehart, and C. V. Whitney, won the Open tournament for the second year in succession, defeating Greentree in the final. The Waterbury Cup was won by the Aknusti team of Elbridge T. Gerry, Robert L. Gerry, Jr., Capt. C. T. I. Roark, and Raymond Guest, who upset the favoured Old Westbury team in the final. The fine all-round play of Michael Phipps earned for him the top handicap rating of ten goals which he shares with Thomas Hitchcock, Jr., Stewart Iglehart, and Cecil Smith.

PORTO RICO : *see* PUERTO RICO.

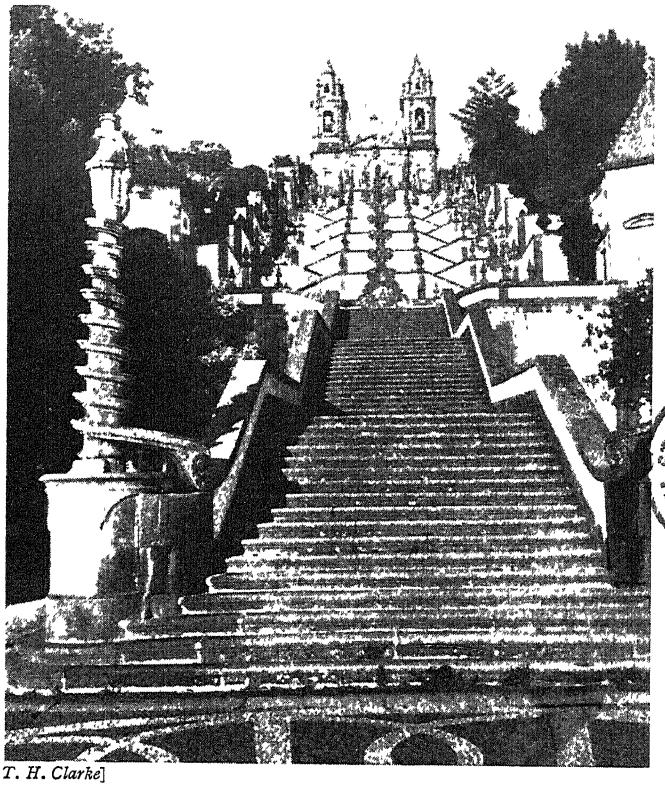
PORTUGAL. On April 27, the prime minister, Dr. Oliveira Salazar, celebrated the tenth anniversary of his assumption of the ministry of finance. The National Assembly proclaimed him a *Benemerito* of the nation, and the Chamber of Corporations held a special commemorative session, which, with characteristic reticence, Dr. Salazar did not attend. The 1938 Budget was the tenth in succession, after a century of almost continuous deficits, to show a surplus, revenue having increased by £528,000 over 1937.

In July and August, President Carmona, with his Colonial minister, Dr. Machado, made a seven weeks' tour of Portugal's Atlantic and West African possessions. During the latter part of his journey he was escorted by a large part of the Portuguese fleet. This was the first colonial tour made by any head of the Portuguese State.

The government has decided to hold official commemorations in 1939 of the 800th anniversary of the Independence



Keystone]
LISBON. OPENING OF NEW PARLIAMENT BUILDING, DEC. 2, 1938, ATTENDED BY GEN. CARMONA AND DR. SALAZAR



T. H. Clarke]
THE CHURCH OF BOM JESUS NEAR BRAGA, PORTUGAL



A. Costa]
ANCIENT WINDMILLS NEAR BRAGA, PORTUGAL

of Portugal under Dom Alfonso Henriques, and in 1940 of the 300th anniversary of Portugal's final separation from Spain.

The British Services Mission, comprising representatives of the Army, Navy, and Air Force, which left London for Lisbon in February in order to collaborate with the Portuguese Services in the study of problems connected with the Anglo-Portuguese alliance, worked until mid-December. The Mission is felt to have been of great utility as a demonstration of Anglo-Portuguese solidarity at a critical period in European history. Its effect was intensified by the presence of a strong British delegation at the quatercentenary celebrations of the University of Coimbra in Dec. 1937; by a visit of part of the British Home Fleet to Lisbon in the following February; and above all by the opening, at Lisbon, on Nov. 23, of the British Institute, founded by the British Council to promote English studies and to spread British culture in Portugal.

Portugal's attitude to the Spanish civil war remains unchanged. Early in 1938, Dr. Teotónio Pereira, the Portuguese minister of commerce, was appointed ambassador to Burgos, and in June Don Nicolás Franco, brother of the head of Nationalist Spain, was accredited as ambassador extraordinary and plenipotentiary to President Carmona.

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(E. A. P.)

Area and Population :

Area (including Azores and Madeira) 35,670 sq. miles.
Population (est. Dec. 31, 1936) 7,301,000.
Chief Towns : Lisbon, capital, 594,390 ; Oporto, 232,280.

President. Gen. Antonio Carmona.

Language. Portuguese.

Religion. Christian (mainly Roman Catholic).

Production 1937 :

Wheat	395,700 metric tons
Barley	43,400 ,, ,,
Rye	117,900 ,, ,,
Oats	107,100 ,, ,,
Maize	349,900 ,, ,,
Rice	86,220 ,, ,,
Potatoes	608,130 ,, ,,
Sea Fisheries (1936)	203,400 ,, ,,
Olive Oil	67,500 ,, ,,
Wine	8,100,000 hectolitres
Coal	283,000 metric tons
Pyrites	350,000 ,, ,,
Superphosphates of Lime	247,000 ,, ,,

Overseas Trade, merchandise, 1937 :

Imports	2,339,197,000 escudos
Exports	1,216,267,000 ,,
Re-exports	384,230,000 ,,

Communications :

Roads (Dec. 31, 1936)	14,539 miles
Railways (Dec. 31, 1936)	2,183 ,,
Shipping (June 30, 1938)	261,100 gross tons

Finance and Banking :

Revenue, ordinary (est. 1938)	1,994,600,000 escudos
Expenditure, ordinary (est. 1938)	1,988,200,000 ,,
Public Debt (Dec. 31, 1937)	7,228,203,000 ,,
Notes in Circulation (Nov. 23, (1938)	2,158,700,000 ,,
Gold Reserve (Nov. 23, 1938)	918,200,000 ,,

Exchange Rate : 110 escudos = £1 stg.

Education 1936 :

Elementary schools 7,872 ; scholars 729,258.
Secondary ,, 41 ; ,, 18,621
Universities 3 ; students (1934–35) 6,476

Miscellaneous :

Motor vehicles licensed (Dec. 31, 1936) : cars 32,228 ; commercial vehicles 11,118 ; cycles 4,277.

PORTUGUESE COLONIAL EMPIRE. Total area (approx.), 844,000 sq. miles; total population (est. Dec. 31, 1936), 16,670,000. The following table lists the colonial possessions of Portugal, together with essential statistics appropriate to each of them, including the mother country itself :

Country	Area sq. miles (approx.)	Population est Dec. 31, 1936 (000's omitted)	Capital	Status	Governors, Premiers, etc.
Portugal, including the Azores and Madeira	35,670	7,301	Lisbon	republic	*President*. Gen. Antonio Carmona
AFRICA					
Angola .	486,000	3,250	Nova Lisbôa	colony	*Premier*: Dr Antonio Salazar. *Governor-General* Col Antonio Lopes Mateus
Cape Verde Is. .	1,538	163	Praia	colony	*Governor* Major A. G. de Figueiredo
Portuguese Guinea	13,830	416	Bolama	colony	*Governor*: Major L. A. de Carvalho
St. Thomé and Principé Is	386	60	St Thomé	colony	*Governor*. Capt R. Vaz Monteiro.
Mozambique . .	297,735	4,250	Lorenço-Marques	colony	*Governor-General* Jose Nunes de Oliveira.
ASIA					
Portuguese India	1,538	600	Nova-Gôa	colony	*Governor-General*: Col. José Ricardo Pereira Cabral
Macao	8	170	Macao	colony	*Governor*: Dr A. T. Barbosa
Timor (P.) . .	7,308	460	Dilly	colony	*Governor*. Major A. de Fontoura.

PORTUGUESE EAST AFRICA: *see* Mozambique.

PORTUGUESE GUINEA. The latest available statistics for this Portuguese colony are given below.

Area and Population:
Area 13,830 sq. miles.
Population (est. Dec. 31, 1936) 416,000
Chief Towns: Bolama (cap.), Bissau, Geba.
Governor. Major L. A. de Carvalho.
Languages. Portuguese and native vernaculars.
Religions. Catholic and Mohammedan.
Production:

Rice (average 1931–35) . .	22,400 metric tons
Ground nuts (export) 1937 . .	21,300 ,, ,,
Palm kernels (oil content, export) (1937)	5,200 ,, ,,

Overseas Trade 1937:

Imports	36,641,873 escudos
Exports	38,535,306 ,,

Roads. 1,714 miles.
Finance and Banking:

Revenue (1936)	27,337,830 escudos
Expenditure (1936) . . .	26,952,915 ,,
Public Debt (Nov. 1937) . .	6,632,222 ,,
Notes in circulation (Dec. 31, 1937)	8,654,811 ,,
Gold Reserve (,, ,,)	6,588,895 ,,

Exchange Rate: escudos ($) 110 = £1 sterling.

PORTUGUESE LITERATURE. Literary productions in 1938 were numerous and spread over many fields. History takes first place, the outstanding themes being the foreign and colonial history of Portugal (João Barreto. *História da Guiné:* 1418–1918; Eduardo Brazão: *Relações externas de Portugal*; F. M. da Costa Lobo: *A Acção diplomática dos portuguêses nos séculos* XV e XVI; S. Saboia: *Os Portuguêses na China*), and the history and topography of Lisbon (Norberto de Araujo: *Peregrinações em Lisboa*; João Pinto de Carvalho: *Lisboa de outrora*; J. A. de Oliveira: *O Cêrco de Lisboa em* 1147). An historical work with a religious appeal is Serafim Leite's two-volume *História da Companhia de Jesus no Brasil.* Of more general interest are Damião Peres' *Como nasceu Portugal* and Armando Marques Guedes' *A Aliança inglêsa*

Further memoirs have been published of one of Portugal's greatest poets (Guerra Junqueiro: *Memórias*), and a fifth volume has appeared of the *Memórias do Conde do Lavradio.*

Creative literature has been enriched by a further volume of poems (*Ultimos Versos*) by the septuagenarian Eugénio de Castro, and by two volumes of prose from the incredibly fertile Aquilino Ribeiro (*A Retirada dos dez mil; Anastácio da Cunha*) Another prolific writer, Agostinho de Campos, has published some new essays (*Glossario*). The prime minister continues to attract biographers (Luiz Teixeira: *Perfil de Salazar*, J. Lucinio Rendeiro: *Trez Homens da História contemporanea*) Novels of 1938 include: Joaquim Paço d'Arcos: *Ana Paula*; Maria Lamas: *A Ilha verde*; Luiz Figuera: *Miragem Africana.*

Among outstanding miscellaneous works are Joaquim Manso's *A Consciencia nua e crua* and *Primavera de lenda*, Joaquim Pires de Lima's *Tradições populares de Entre-Douro e Minho*, and V. Botelho do Amaral's *Dicionário de dificuldades da lingua portuguesa.* (E. A. P.)

PORTUGUESE WEST AFRICA: *see* Angola.

POST OFFICE. The work of the British Post Office during the year 1937–38 (accounts are made up to the end of March) showed increases in nearly every department Transactions under all headings for the first time exceeded the thousand million mark, rising from £961,948,000 in 1936–37 to £1,026,064,000, an increase of over £64 millions. Letters, etc., increased by 300 millions to the new record of 7,990 millions, and parcels by nearly 5·2 millions to 175½ millions. The number of money orders issued rose by 718,000 to 16·84 millions, representing a sum of £69,501,000, an increase of £4,255,000; while the sale of postal orders showed a rise of nearly 55½ millions in number and over £11 millions in amount to nearly 400 millions and £99,903,000 respectively, a result for which the growth of football pools (*q.v.*) is thought to be largely responsible.

The telephone service also showed substantial growth; the net addition of 223,000 telephones (8 per cent) bringing the total to 3,050,012. The total originated effective calls increased—in millions—from 1,981 to 2,166, local calls from 1,881·6 to 2,059·3, inland trunk calls from 98·965 million to 105·838, and international conversations from 3,567,000 to 3,912,000 chargeable units. In spite of these large increases in the service the telephone surplus at the end of the year fell by £1,042,910 to £429,460, but this was largely attributable to the effect of the operation throughout the year of the substantial reductions in telephone tariffs introduced in October 1936.

This drop in the telephone surplus accounts for almost the entire reduction in the surplus of the commercial accounts of the Post Office services as a whole during the year. This, after charging interest on capital is returned

at £11,227,880, a reduction on the previous year of £1,078,889 The only departments to show actual decreases, apart from War Pensions, are Telegrams, Inland C O D parcels, and Entertainment Duty stamps. Telegrams, after showing increases for two successive years, fell back slightly, Inland to 49,226,000 from 49,253,000, and Overseas and Ships to 9,156,000 from 9,238,000, but the special "greetings" telegrams were a success, the numbers increasing by 37 per cent of the previous year's total to 4,046,000.

Among other services performed by the Post Office, Old Age, Widows', etc Pensions orders paid totalled £181,547,000, an increase of nearly 5¾ millions, Health and Pension Insurance stamps amounted to £58,025,000 (£2·3 million increase); the sale of Unemployed Insurance stamps rose by £936,000 to £42,044,000; licences issued, other than wireless, put on 39,000 to 4,490,000, while, wireless receiving licences increased to 8,593,000.

The Post Office personnel numbers (as at March 31, 1938) 278,995 (an increase of 6·6 per cent during the year), it had open 24,717 post offices and 13,881 telegraph offices, and owned 16,362 motor vehicles. Capital expenditure on plant, sites, and buildings during 1938 amounted to £17,172,873 (an increase of £3,555,000), mainly for telephone development.

At the end of April the Postmaster-General announced extensive plans for reorganization, which it is hoped will be completed during 1941. In 1936 two experimental "regions" were set up, one the North-Eastern, with headquarters at Leeds, and the other comprising Scotland, controlled from Edinburgh; each was under a director with a board consisting of the officers responsible for the different services, the whole having complete autonomy under the Postmaster-General. The success that attended this experiment has now led to the regionalization for Post Office purposes of the whole of the country; there are to be nine regional areas, each with its autonomous director and board; those already in being are to be retained, and the other seven (with their headquarters) are: the present London Postal and Telecommunications region; the Home Counties (London); Midland (Birmingham); North-Western (Manchester); South-Western (Bristol); Welsh and Border Counties (Cardiff); and Northern Ireland (Belfast).

An International Telecommunications Conference was held at Cairo during February and March to deal with regulations and rates, and with wave-lengths for broadcasting and radio-communications; over 700 delegates representing 72 countries attended. Plain and code language rates for telegrams within Europe were unified at approximately 92 per cent of the standing full rate; rates for extra-European countries were unchanged. The changes came into force on Jan. 1, 1939.

There was a wide expansion of the Air Mail services during the year, as a result of which the use of the blue air-mail labels for services to Europe and to most countries on the Empire air routes is discontinued, and the last of the special blue air-mail letter-boxes has disappeared from the London streets. (L. H. D.)

POTASH. The crude potassium salts output of the world is almost exclusively the chloride or sulphate, with a small proportion of nitrate and carbonate, produced primarily for fertilizer use; only a very small amount goes into industrial chemicals, and even in the United States, where the industrial demand is probably higher than in any other country, with the possible exception of Germany, the chemical salts comprise only about ten per cent of the total. World production decreased from 2,800,000 metric tons of K_2O equivalent in 1929 to 1,400,000 tons in 1932, increasing to 2,821,000 tons in 1936, distributed as follows: Germany 58 per cent, France 17 per cent, United States 9 per cent, Soviet Union 12 per cent, and Poland 3 per cent; the remaining one per cent comes from Palestine, Spain, and several still smaller sources.

(*See* also FERTILIZERS)

POTATOES: *see* ROOT CROPS; MARKETING BOARDS

POULTRY. The poultry population of Great Britain on "agricultural holdings" declined from a peak of 71·3 millions in 1934 to 63,675,000 in 1938. The central problem of the industry in Britain as elsewhere, is the high rate of mortality both in breeding and, through disease, in the laying flock. Disease causes a loss to the industry which for 1937 was estimated at £4 millions, but unfortunately the most serious poultry diseases of to-day, lymphomatosis (fowl paralysis) and coccidiosis, still baffle the research worker. The Poultry Technical Committee made a special investigation of conditions throughout Britain and, reporting in January 1938, recommended compulsory registration and inspection of all distributors of stock (eggs and chicks), a voluntary grading system for breeding farms with State assistance by way of premiums and free veterinary services, regulation of auction sales, establishment of progeny-testing stations, increased provision for research and education and the creation of a Poultry (Stock Improvement) Commission to supervise these measures in Great Britain.

United Kingdom imports of eggs in shell totalled 27·7 million great hundreds in 1938 as against 24·7 million great hundreds in 1937, representing some 38 per cent of the total supply. Just under one-third of United Kingdom imports came from Denmark, and about one-quarter from Empire countries Shipments from the southern hemisphere, notably Australia, have increased rapidly; and since these arrive chiefly in the off-season, they help to reduce the seasonality of supplies.

The United Kingdom and Germany are the only important importers of eggs, though Germany's imports are less



Fox Photos]

AN UNUSUAL DISPLAY OF CHRISTMAS FARE BY A HIGH WYCOMBE POULTERER, DEC. 1938

than half what they were ten years ago Denmark, who chiefly supplies the United Kingdom, has been able to increase her poultry population, and her egg exports have risen from 51,073 metric tons (average of 1927–31) to 96,774 metric tons in 1937. The Netherlands, on the other hand, whose market was principally Germany, at first found no other outlet when that market closed, and was forced to reduce the size of her poultry industry. In 1937 and 1938 however she has found new markets, and egg exports at 76–80,000 metric tons are almost back at their 1931 level. Danish eggs in London, in December 1938, fetched 16*s* 4*d* per 120 (18 lb) as against 17*s*. 9*d*. the previous December. Australian eggs fetched 13*s* 3*d*. per 120 (17 lb) against 14*s* 9*d*. in December 1937.

BIBLIOGRAPHY *Report of the Poultry Technical Committee of Great Britain*, H M. Stationery Office 1938, also O. J. Beilby, *Factors affecting Egg Prices*, Oxford 1937 (P L. Y)

PRESBYTERIAN CHURCH. The year 1938 has been marked by growing emphasis upon the importance of theology for the Church, the influence of the Barthian school and of John Calvin being most noticeable on the European Continent and in New Zealand. The Calvinistic Congress in Edinburgh in July was a further sign of the times, but in Great Britain and elsewhere there are signs of reaction against the extremer claims of the Neo-Calvinists.

The four main fractions of the Reformed Church in France have taken steps to unite together and the United Church, planned to come formally into existence on New Year's Day, 1939, will comprise about one million souls. In spite of renewed emphasis in many quarters upon Confessional principles, most of the Presbyterian Churches are taking their full share in the œcumenical movement, which numbers many Presbyterian churchmen amongst its foremost leaders.

In Europe several of the principal Reformed (*i.e.* Presbyterian) Churches are suffering—in common with Churches of other Confessions—a growing impoverishment, and in some cases persecution or interference with their work and witness. With a view to helping them, the more prosperous Churches of other lands have supplied direct financial assistance and also considerable numbers of bursaries for the training of their students for the ministry This assistance has been particularly valuable in the case of the Ukrainian Evangelical Reformed Church of Poland, which came into existence a dozen years ago and continues to increase.

In Great Britain and in the Dominions the Presbyterian Churches continue to make quiet but steady progress. Most of them have undertaken large responsibilities in church extension, in view of the erection of great new housing areas as in Scotland, or of fresh settlements as in Canada and New Zealand. The Australian Inland Mission provides unique spiritual, educational, medical, and social services in that Continent. (W. T. E.)

There are twelve Reformed Churches governed by the Presbyterian system in the U.S.A., comprising 28,051 ministers, 18,684 churches, and 3,940,500 communicant members. Outside the continental United States, they have 2,221 American foreign missionaries and 12,800 native workers in a total of twenty-one countries, and a communicant membership of 239,258.

A plan of union between the Presbyterian Church in the United States (Southern) and the United Presbyterian Church of North America, approved several years ago by the former, awaits action by the United Presbyterian Church.

The organic union of the Reformed Church in the United States and the Evangelical Synod of North America initiated in 1934, was finally consummated in 1938, with the adoption by the General Synod of a constitution. The united church is to be known as the Evangelical and Reformed Church.

An historic event of 1938 was a celebration, held in connexion with the General Assembly of the Presbyterian Church in the United States, of the hundred and fiftieth anniversary of the meeting of the 1788 General Assembly, which was the first General Assembly of American Presbyterianism.

PRICES, STATISTICS OF. Commodity prices in 1938 were, on the whole, lower than in 1937. In the League of Nations publication *World Production and Prices*, 1937–38, Appendix IV, there is a record of monthly wholesale price indices for the first few months of 1938, and for previous years and months, for forty countries For 25 of these countries, the average index for the first part of 1938 is less than that of 1937, and for the other fifteen it is greater. On the other hand, cost of living, as recorded by the various indices, was higher in 1938 than in 1937, in all but six countries. For all the forty countries, the wholesale price index number was higher in 1937 than in 1936, and for 38 the cost of living index was also higher. A lag is generally observed between the movement of the wholesale price index and that of cost of living.

A comparison of present times with pre-war is afforded by the following table, given by the *Bulletin de la Statistique Générale de la France*. Here, price changes due to currency devaluation are eliminated.

Wholesale Prices in Gold (Pre-war=100)

	France	Great Britain	Italy	Netherlands	U.S.A.	Germany
1937	69	78	70	79	73	106
1938						
Jan.	61	78	76	79	69	106
Feb.	61	77	75	78	67	106
March	58	75	75	76	67	106
April	58	74	75	75	67	106
May	55	74	76	75	66	105
June	56	72	76	75	66	106
July	55	72	75	73	67	106
Aug.	54	71	75	72	66	106
Sept.	52	69	76	72	66	106
Oct.	53	68	76	73	66	106
Nov.	53	68	76	—	66	106
Dec.	54	—	—	—	—	—

Relative to the pre-war period, present prices are considerably reduced when account is taken of the changed values of currencies. Compared with 1937, the drop in the general level in France from 69 to 56 (a reduction of nearly twenty per cent) is far greater than in the other countries shown here. For Great Britain the reduction is about five or six per cent, and for the Netherlands a similar reduction is shown. For the United States the reduction is nearly ten per cent. In Germany, prices are practically stationary, and in Italy there has been an increase of seven or eight per cent.

Similar tendencies are shown in the figures in the table below, taken from the monthly *Wirtschaft und Statistik*.

In this table the base periods are the same as those of the official index numbers from which these figures have been computed by making allowances for changing values of currencies.

Wholesale Prices in Gold

	France	Great Britain	Italy	Netherlands	U S A.	Canada
Base Period	1913	1930	1928	1926–30	1926	1926
1937	71·6	65·6	52 6	62 0	51·3	50 2
1938						
Jan.	63·9	65·5	56·2	61·7	47·9	49·6
Feb.	63 0	64·3	55·3	60 9	47·0	49·3
March	59 9	63·2	55·4	60·0	47·2	49·1
April	60·6	62 7	56·1	59·5	46·7	48·6
May	56 0	61·9	56·5	58·9	46·4	47·3
June	56 4	60·8	56·8	58·4	46·3	47·0
July	55 4	60·5	56 0	58·0	46·8	46·4
Aug.	54·4	59·3	56 7	57·2	46·4	45·0
Sept	54·2	57 9	57·2	56·4	46·7	44·2
Oct.	54 6	57·8	57·2	57·1	46·2	43·2
Nov.	54·3	56 6	57·4	56·4	46 0	—

The official indices and base periods are given in the table below, and changes which have taken place in the currency of the country are also represented.

Wholesale Prices in Currency

	France (*a*)	Great Britain (*b*)	Italy (*c*)	Netherlands (*d*)	U.S.A (*e*)	Canada (*f*)	Germany (*g*)
Base Period	July 1913	1930	1928	1926–30	1926	1926	1913
1937	563	108·7	89·1	76·2	86·3	84·6	105·9
1938							
Jan.	612	107·7	95·2	75·2	80 9	83 8	105·6
Feb.	614	105·8	93·7	74·2	79·8	83·6	105·7
March	619	104·1	93·8	73·2	79·7	83·1	105·8
April	619	103·1	95·0	72·5	78·7	82 3	105·6
May	643	102·0	95·7	71·9	78·1	80·3	105·4
June	653	100·7	96·2	71·6	78·3	80 1	105·6
July	652	100·6	94·9	71·3	78·8	78 6	105·6
Aug.	644	99·5	96·0	70·8	78·1	76 0	105·9
Sept.	646	98·4	96·8	70·5	78·3	74·5	105 6
Oct.	654	99·1	96·9	70·9	77·6	74·1	105·7
Nov.	657	98·4	97·2	70·2	77·5	73·5	106·1
Dec.	666	98·3	96·4	—	—	—	106·3

(*a*) Statistique Générale.
(*b*) Board of Trade.
(*c*) Instituto Centrale di Statistica.
(*d*) Centraal Bureau voor de Statistiek.
(*e*) Department of Labour.
(*f*) Bureau of Statistics.
(*g*) Statistisches Reichsamt.

It must be remembered that considerable changes took place from 1936 to 1938 in the value of the franc in relation to other currencies. For the first nine months of 1936, the sterling rate was about 75–76, the dollar rate about 15. For the next six months, the rates were about 105 and 21·50 respectively. From July 1937 to April 1938, the external value of the franc deteriorated further, the sterling rate changing from about 130 to 160, and the dollar rate changing from about 26 to 32. A further change took place in May 1938, since when the pound has been worth about 178 francs and the dollar 36–37 francs.

Great Britain: Commodity Prices. The trend of events in Great Britain during 1938 is well shown by the Board of Trade index of wholesale prices, which follows, together with the subsidiary indices relating to three classes of goods: basic materials, intermediate products, and manufactured articles.

Board of Trade Indices (1930=100)

	All Commodities	Industrial Materials (excluding fuel)		
		Basic	Intermediate Products	Manufactured Articles
1936	94·4	98·9	93·2	98·2
1937	108·7	122·9	108·9	111·4
1938	101·4	92·9	104·5	111·2
Jan.	107·7	105·8	108 0	114·0
Feb.	105·8	100·2	106·4	113·4
March	104·1	96·7	105·8	113·2
April	103·1	93·8	105·2	112·7
May	102·0	90·5	104·8	111·9
June	100 7	87·3	103·9	111·4
July	100 6	89·3	103 9	111·7
Aug.	99·5	90·5	103·1	111·5
Sept.	98·4	89·2	103·8	111·4
Oct.	99·1	91·1	103·7	111·6
Nov.	98·4	91·4	103 0	111·7
Dec.	98·3	89·9	102·5	111·2

The total index for all commodities is derived from data concerning foodstuffs as well as materials. The downward movement of the basic material index has been on the grand scale. In April 1937 it reached a high level of 132·2, and then gradually declined until June 1938, since when the index has shown a slight rise. Copper averaged about £55 per ton in 1937, was about £35 per ton in June 1938, and at the end of the year was about £43 per ton. Tin was about £240 per ton in 1937, £177 per ton in June 1938, and about £214 per ton in December. Lead averaged about £23 per ton in 1937, was about £14 per ton in June 1938, and was £15½ per ton in December. Cotton averaged about 6½*d.* per lb. in 1937, was about 4½*d.* per lb. in June 1938, and was about 4¾*d.* per lb. in December. Rubber averaged 9½*d.* per lb. in 1937, declined to 6*d.* per lb. in the middle of 1938, and has since risen to 8*d.* per lb.

The decline in the prices of intermediate products was not so marked as that in the prices of basic materials, just as the previous increase to the middle of 1937 had not been so marked. This index rose from an average of 93·2 in 1936 to 113·1 in July 1937, and then declined to 103·1 in Aug. 1938, since when there has been a slight upward movement. Similarly, there was a recession in the index of manufactured articles. This reached a figure of 115·4 in Aug. 1937, and receded to 111·4 in Sept. 1938.

The changes in prices of materials are shown in greater detail in the following table, where now no distinction is made between the stages of manufacture.

The general index for all materials fell from its high level of 116·1 in July 1937 to 101·3 in June 1938, *i.e.* about thirteen per cent. Coal prices are normally affected by the seasons, but when allowance is made on this account, it will be seen that the coal index has declined by about six per cent. Iron and steel prices were lower in 1938 than the maximum in 1937, and the index of the non-ferrous metal group moved from a high figure of 142·9 in March 1937 to a low figure 88·3 in June 1938, subsequently rising to about 100. Cotton and wool also showed considerable changes, from high levels to low, from 109·1 in April 1937 to 80·9 in June 1938, and 136·5 in May 1937 to 99·7 in July 1938, respectively. Other textiles declined by about thirteen per cent, and the chemicals figure by about five per cent. The recovery in the price level in the latter part of 1938 is fairly general.

Board of Trade Wholesale Price Indices by Commodity Groups: Materials (1930 = 100)

	Coal	Iron and Steel	Non-Ferrous Metals	Cotton	Wool	Other Textiles	Chemicals and Oils	Miscellaneous	All Materials
1936	107·6	106·6	93 0	88 8	105·1	72·6	93·5	92·3	95 7
1937	124·9	129 6	117·4	97 7	127 5	76·3	99 4	110·2	112·0
1938	123 2	139 1	94·4	83 6	101·4	68·7	94 7	93 2	103 5
Jan	131·0	141 2	96 2	88 0	107·3	70·8	97·1	104·8	109·0
Feb	130·0	140·3	93·9	87·4	103·1	70·1	95·9	100·5	106·9
Mar	129·7	140·3	94·6	87·2	102 3	68·8	95·5	97 0	105·7
Apr	127 7	139 5	92·1	85 2	102·2	68·1	95·0	95·2	104 4
May	120 6	138·9	89 1	82·7	102·2	67·9	95·3	92 6	102·7
June	119·6	138·6	88·3	80·9	100 4	67·5	94·5	89·8	101·3
July	118·5	138·8	93·5	83 5	99·7	69·0	94 7	89·5	101·9
Aug	117·6	138·5	93 8	82·0	100 4	68 6	94·2	90 5	101·9
Sept.	118·5	138 6	95·4	81·4	99·7	68·4	93·8	89 9	101·7
Oct	120 1	138 1	99·8	82 8	100 5	69·2	94·0	90 4	102 4
Nov.	123·0	138 3	100·1	82·5	100·4	68·0	93·3	90 5	102·5
Dec.	122·8	138 2	87 1	80·7	99·2	68 3	93·5	89·4	101 7

A similar downward movement in prices of foodstuffs is shown in the Board of Trade index relating to this class of goods. Perhaps the most important single movement is that of the price of wheat. Wheat averaged over 9*s.* per cwt. in 1937, it was about 8*s.* in June 1938, and in December was under 4*s.* 6*d.* The wheat crop in the United States and Canada was especially large in 1938. Details for the constituent groups of the food index are given below.

Board of Trade Indices by Commodity Groups: Foodstuffs (1930 = 100)

	Cereals	Meat, Fish, and Eggs	Other Foods and Tobacco	All Foods
1936	99·1	81·1	94·8	91·7
1937	127·0	86·4	98·7	102·2
1938	109·9	85·9	97·5	97·3
Jan.	132·5	89·7	99·7	105·0
Feb.	129·7	88·0	98 7	103·4
March	123·4	85·3	98 2	100·7
April	120·0	86·8	98 0	100·3
May	117·1	84·6	101·7	100·4
June	112·5	84·5	102·1	99·4
July	108·9	85·2	100·0	97·8
Aug.	105·2	83·8	95·9	94·7
Sept.	98·5	84·5	92·8	91·9
Oct.	97·3	86·2	94·2	92·6
Nov.	90·5	84·8	95·2	90·6
Dec.	92·6	87·6	95·4	91·8

The index for all foods rose during 1937 to 105·3 in October. It declined to 91·9 in Sept. 1938, a change of about thirteen per cent. The cereals figure was 133·1 at its maximum in Oct. 1937, and subsequently declined by about 32 per cent to 90·5 in Nov. 1938. There was less variation in the meat figure, the highest for 1937 being 90·4 in September, compared with 83·8 in Aug. 1938. At the end of 1938 the index for all foods was again well below the level of the base year 1930, as it had been in the period 1931–36. The rise in 1937 and the first part of 1938 was almost wholly due to the enormous rise in the cereals index.

Commodity Prices: France. In the table below, the indices for important sections of commodities and for foods are shown together.

It is to be observed that when, in May 1938, the franc went to a new level in relation to the pound and the dollar, and the general level of the total index moved from 619 to 643, this was accompanied by a change in the food index from 623 to 652, and a change in the raw materials index from 617 to 636. But since then, while the raw materials index has continued to rise, the food index has receded to the same level as at the beginning of the year. The decline in the food index from the middle of the year is due to a decline in the index figures for vegetables, the other indices having risen. The increase in the raw materials index is mainly due to an increase in the index for minerals and metals, the remaining indices not having risen to the same extent.

Wholesale Price Indices of the Statistique Générale (July 1914 = 100)

	Total Index	Foods	Vegetable Foods	Animal Foods	Sugar, Coffee, etc	Raw Materials	Minerals and Metals	Textiles	Others
1937	563	556	578	528	568	571	666	475	570
1938									
Jan	612	620	645	602	604	605	677	502	623
Feb	614	625	637	623	598	605	684	499	620
March	619	617	653	591	592	623	712	524	627
April	619	623	686	572	593	617	686	523	632
May	643	652	739	583	609	636	700	549	650
June	653	659	788	553	608	648	746	548	649
July	652	638	692	593	615	665	761	566	665
Aug.	644	628	632	621	630	659	753	570	655
Sept	646	628	640	606	649	663	778	570	648
Oct	654	635	623	650	624	672	801	582	648
Nov.	657	634	595	662	656	678	805	575	663
Dec.	666	648	619	668	667	682	795	598	664

Commodity Prices: Italy. In the following table, some of the more important sections of the price index are shown separately.

Wholesale Price Indices of the Instituto Centrale di Statistica (1928 = 100)

	Total Index	Raw Materials Indices		
		All	Food	Not Food
1937	89·1	89·5	89·4	90·1
1938				
Jan.	95·2	92·1	92·2	92·0
Feb.	93·7	89·2	88·9	91·4
March	93·8	89·4	89·0	91·9
April	95·0	91·1	91·2	90·2
May	95·7	91·0	91·1	89·5
June	96·2	91·9	92·2	89·1
July	94·9	90·4	90·4	90·4
Aug.	96·0	90·9	91·0	89·9
Sept.	96·8	91·5	91·8	89·5
Oct.	96·9	91·9	92·1	90·6
Nov.	97·2	93·0	93·3	90·1
Dec.	96·4	91·7	92·1	89.0

The total index rose some five per cent from 1937 to 1938, but the raw materials index rose only some two per cent. The increase in the total index was therefore chiefly due to increases in the prices of partly or mainly manufactured goods. The slight upward movement in the raw materials index was due to a change of the same kind in the food part of this index, the commodity figures showing on balance hardly any change at all.

Commodity Prices: Netherlands. Detailed figures to indicate the changes in the subsidiary indices are shown in the table following.

Wholesale Price Indices of the Centraal Bureau voor de Statistiek (1926–30 = 100)

	Total Index	All Foods	Vegetable Foods	Animal Foods	Raw Materials
1937	76·2	75·8	83·5	70 1	69 3
1938					
Jan .	75 2	79 0	84·6	74·7	61·8
Feb	74 2	77·9	84·0	73 3	59 9
March	73 2	75·4	82·6	69 9	59·3
April .	72·5	74·4	84·7	66·7	58·0
May .	71·9	74·4	87·0	64·9	57·1
June	71 6	74·9	89·7	63·7	56 0
July	71·3	73·7	81·9	67·6	56·3
Aug. .	70 8	73·3	78·3	69 5	55·4
Sept.	70·5	72·1	75·4	69·5	55·3
Oct.	70 9	73 2	75·1	71 7	55·4
Nov .	70·2	72·2	74·1	70 8	54 7

The index figures for foods fell only slightly, less than the fall in the total index. On the other hand, the fall in the raw materials index was very considerable, from 69·3 in 1937 to 54·7 in Nov. 1938. In the food group, the vegetable foods index increased in the first half of 1938, and then fell sharply, while the animal foods index fell in the first half of the year and subsequently rose. The most important aspect of these figures is the heavy fall in the raw materials index.

Commodity Prices : U.S.A. The trend of wholesale prices during 1938 is shown in the accompanying figures, where the main subsidiaries of the price index are also given.

Department of Labour Indices of Wholesale Prices (1926 = 100)

	All Commodities	Farm Products	Foods	Raw Materials	Semi-manufactured Articles	Finished Products
1937	86·3	86·4	85·5	84·8	85·3	87·2
1938						
Jan. .	80·9	71·6	76·3	74·9	76·9	84·3
Feb. .	79·8	69·8	73·5	73·6	76·1	83·3
March .	79·7	70·3	73·5	73 2	75·6	83·4
April .	78·7	68·4	72·3	71·3	75·3	82·7
May .	78·1	67·5	72·1	70·7	75·4	82·1
June .	78·3	68·7	73·1	71·4	74·1	82·2
July .	78·8	69·4	74·3	72·3	74·3	82·5
Aug. .	78·1	67·3	73·0	71·4	74·4	81·8
Sept. .	78·3	68·1	74·5	72·0	74·7	81·8
Oct. .	77·6	66·8	73·5	70·9	75·5	81·1
Nov. .	77·5	67·8	74·1	—	—	—

As the general level in each of these series was very nearly the same in 1937, a fair idea of the changes which took place in 1938 can be got by considering each set of 1938 figures in direct relationship with the others. Farm products show the greatest fall, then raw materials. Food prices have declined on the whole by about the same extent as semi-manufactures. The usual difference between the changes in raw materials, semi-manufactures, and finished products is to be noted. Prices appear to have stiffened early in the year. The fall in raw material prices from 1937 is not of the high order which was noted for Great Britain. On the other hand, the decline in food prices was greater, which is the reason why the cost of living index in the United States is lower during 1938 than it was in 1937. The changes in individual food groups are given below.

Food Price Indices (Department of Labour) (1926 = 100)

	All Foods	Dairy Products	Cereal Products	Fruits and Vegetables	Meats	Other Foods
1937	85·5	93·1	87·6	74·2	99·0	75 6
1938						
Jan. .	76·3	83·3	83 0	56·7	82·6	69 5
Feb .	73·5	78·3	83·2	56·8	78·4	66·7
March	73·5	76·7	80·9	56·5	81·6	65·9
April	72·3	71·7	79·8	56·8	82·2	64·5
May .	72·1	69·1	78·4	58·7	82·1	65 4
June .	73·1	68·5	80·2	61·7	84·5	64 7
July	74·3	69·5	78·8	56·4	89·7	66·7
Aug	73·0	68·8	77·0	57·3	86·0	66·5
Sept. .	74·5	72·8	76·1	55·5	87·3	69 5
Oct	73·5	71·6	75·1	57·5	83·3	70·4
Nov.	74·1	72·5	74·0	63·0	81·9	71 0

All the component indices fell, but the extent of the decline was greatest for dairy products and fruits and vegetables. Meat prices rose during 1938 from a low level at the beginning of the year.

Commodity Prices : Canada. For Canada, wholesale prices fell fairly consistently during 1938. Some of the more important items are given here.

In the food group the general level was fairly maintained until July, but in the raw materials group the fall was considerable, especially towards the end of the year.

Wholesale Price Indices of the Bureau of Statistics (1926 = 100)

	All Commodities	Foods, Beverages, Tobacco	Raw Materials and Partly Manufactured Articles
1937	84·6	81·2	84·3
1938			
Jan. . .	83·8	79·8	82·0
Feb. . .	83·6	80·7	81·1
March	83·1	81·2	79·7
April.	82·3	80 6	79·0
May . .	80·3	78·4	75·8
June . .	80·1	79·2	75·3
July . .	78·6	79·0	72·5
Aug.. .	76·0	75·8	67·5
Sept.. .	74·5	74·3	65·6
Oct. . .	74·1	73·0	65·1
Nov.. .	73·5	72·0	64·6

Commodity Prices : Germany. As previously observed, the total wholesale price index hardly changed at all during 1938. The following table shows the extent of the movements in some of the more important subsidiary series.

The food index was slightly higher in 1938 than in 1937, as was also the manufactured articles index, while the raw materials index was lower. The aggregate index was practically unchanged. The vegetables part of the food index was somewhat higher in the first half of 1938 and fell below the 1937 level in the latter part of the year. The meat index rose slightly during the year, and the other animal products figure also rose. But all these changes were small, no more than two or three per cent. The coal figure was at a slightly higher level in 1938 than in 1937, there being a fall in the summer months. The iron index again rose, but in the figures here presented the most significant changes occurred in the figure for other metals and to a lesser extent in textiles.

Wholesale Price Indices (Statistisches Reichsamt) (1913 = 100)

	Total Index	Foods	Vegetable Foods	Meats	Animal Products	Raw Materials and Partly Manufactured Articles	Coal	Iron	Other Metals	Textiles	Manufactured Articles
1937	105·9	104 6	115·0	87 2	110·1	96 2	113 4	102·9	65 3	88·9	124·6
1938											
Jan.	105 6	105 0	115·7	86·6	111·2	94 4	114·7	103 0	52·0	81·0	125 9
Feb.	105·7	105·3	116·1	86 7	111·4	94·4	114 7	103·7	50·6	80·4	126 0
March	105·8	105 6	116 8	86 8	111·6	94·4	114 7	103·7	50 9	80·2	126 0
April	105·6	105·7	116·6	87 2	111·6	93·9	113·2	103·7	49·9	79·8	126·0
May	105·4	105·8	117·2	87·2	111·6	93 4	112·4	103 8	48·0	79·5	125·9
June	105·6	106 0	117·2	88·0	111·6	93 7	112·7	103·9	46·9	79·2	125 9
July	105 6	106·0	116·7	89·1	112·4	93·8	113 2	104 0	50·3	79·7	125·9
Aug.	105 9	106 6	116·1	90 9	112·4	94·0	113·5	104·1	50·7	79 8	125·8
Sept.	105·6	105·6	113·8	90·0	112·4	94·0	114 1	104·1	51·1	78·9	125·6
Oct.	105 7	105·7	114 2	89 9	112·5	94 2	115 0	104 2	53 4	78·1	125 6
Nov.	106·1	106·8	114 7	90 5	115·2	94 2	115 0	104·3	53·3	78·1	125·5
Dec.	106·3	107·2	115 2	90 4	115·8	94·3	115 0	104·4	51 3	78·0	125·6

We note that the German indices for foods are now above the pre-war level, while those for raw materials are below that datum. For Great Britain, according to the *Statist* index of wholesale prices, both these figures stand at about the same level, about twenty per cent above the 1913 figure. In Germany there has been a greater increase in vegetable foods than for animal foods. The same is true for Great Britain. In Germany, there has been a greater relative increase in the index for coal than for iron, but in Great Britain the reverse is true.

Cost of Living. The changes in the cost of living indices of certain countries are shown in the table below.

Cost of Living Indices

	France (a)	Great Britain (b)	Italy (c)	Netherlands (d)	U S.A. (e)	Canada (f)	Germany (g)
Base Period	1914 (Paris)	July 1914	1928	1911-13 (Amsterdam)	1923	1926	1913-14
1937	619	154	91·7	137·3	88·5	83·1	125·1
1938							
Jan.	—	159	99·1	139·1	87·5	84·0	124·9
Feb.	688	157	99·2	138 7	86·7	83·9	125 2
March	—	156	99·2	137 9	86·7	84·2	125·5
April	—	154	98·7	138·2	86·8	84·2	125·6
May	692	156	99 7	139·1	86·5	84·1	125·9
June	—	155	98·8	140·4	86·7	84·0	126·0
July	—	159	99·0	138·7	86·5	84·1	126·8
Aug.	689	156	98·6	138·4	85·9	84·8	126·5
Sept.	—	156	98·6	138·7	85·9	84·0	125·2
Oct.	—	155	99·0	138·3	85·8	83·8	124·9
Nov.	—	156	99·5	137·4	85·6	83·7	125·0
Dec.	—	156	100·0	—	—	—	125·3

(a) Statistique Générale.
(b) Ministry of Labour.
(c) Instituto Centrale di Statistica.
(d) Centraal Bureau voor de Statistiek.
(e) National Industrial Conference Board.
(f) Bureau of Statistics.
(g) Statistisches Reichsamt.

With the exception of the United States, the indices all show that cost of living was higher during 1938 than in 1937, especially in France, where retail prices have advanced considerably during the past two years. Movements of cost of living indices are, of course, more lethargic than corresponding movements of wholesale price indices, since cost of living indices include as part of their make-up more stable items, such as rent. For Italy the increase has been in the neighbourhood of eight per cent. This is mainly attributable to rises in retail prices of food, for which the increase was about seven per cent. For Germany and the Netherlands the increase is very slight, only in the neighbourhood of one per cent. For Great Britain, too, the increase in the index is slight, just over one per cent.

Great Britain: Cost of Living. The Ministry of Labour cost of living index takes account of changes in food, rent, clothing, fuel and light, and miscellaneous articles. The figures for each of these items during 1938 are shown below.

Ministry of Labour Cost of Living Indices (Percentage increase above July 1914)

	Food	Rent	Clothing	Fuel and Light	Miscellaneous
1937	39	59	100–105	75–80	70–75
1938					
Jan.	45	59	110	80–85	75
Feb.	42	59	110	80–85	75
March	40	59	110	80–85	75
April	37	59	110	80–85	75
May	39	60	110	80–85	75
June	38	60	110	75–80	75
July	46	60	110	75–80	75
Aug.	41	60	110	75–80	75
Sept.	40	60	110	80	75
Oct	39	60	105–110	80	75
Nov.	40	61	105–110	80–85	75
Dec.	39	61	105–110	80–85	75

The food figure declined slightly during 1938, but, on balance, is a little higher than in 1937. On the whole, slightly higher figures have been used in the construction of the index for the other constituents, so that the increase in the final index (*see* above) is attributable to some increase in each item.

Of the individual foods, beef prices rose in the latter half of 1937, and were maintained during 1938. The same applies to imported mutton, though in the last few months of 1938 the price of home mutton fell from the level reached in 1937. Bacon prices ruled higher during 1938, but fish

prices were practically the same on the average. The price of flour fell quite considerably during 1938, and the price of bread moved in sympathy. Tea was at a higher price during 1938, but sugar fell somewhat from the higher level reached during the latter part of 1937. Milk, butter, cheese, and margarine were on the average more expensive in 1938 than in 1937, and potatoes cheaper.

Cost of Living: France. For France the cost of living index for food alone, computed monthly for Paris on a 1914 base, was very nearly the same as that for "all articles", including food, soap, oil, coal, gas, and electricity. It moved at a slightly higher level than the quarterly index of total cost of living. The figures for 1938 are given here.

Cost of Living, Food: for Paris (Statistique Générale) 1914 = 100: (average 1937 = 610)

1938 Months	Jan	Feb.	March	April	May
Index .	690	692	690	690	697

Months	June	July	Aug.	Sept.	Oct.	Nov.	Dec
Index	697	688	693	707	727	742	756

The tendency during 1938 was upwards. Compared with 1937, retail food prices have increased by about the same proportionate amount as have wholesale prices.

Cost of Living: Netherlands. Whereas the Amsterdam figures for cost of living generally were on the average in 1937 and 1938 lower than those of the two years 1934 and 1935, the indices for food alone are higher. In the aggregate the cost of the other elements in the total index has fallen. The food figures are shown below.

Cost of Living, Food: for Amsterdam (Centraal Bureau voor de Statistiek) (1911–13 = 100)

1938 Months	Jan.	Feb.	March	April	May
Index . .	130·4	130·1	128·4	129 0	131·5

Months	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Index	134·1	129·5	128·7	129·6	129·8	128·3	—

The 1937 average was 127·4.

The figure for food in the cost of living index was higher on the average in 1938 than in 1937, and the changes in this part of the index account substantially for the changes in the total index.

Cost of Living: U.S.A. As already stated, cost of living, measured by the index of the National Industrial Conference Board, fell in 1938 compared with 1937. The relevant statistics are given below.

The food figure showed the greatest fall from 1937 level. There was also some decline in the clothing index, but the fuel index on the average hardly moved. The housing and sundries indices showed a slight appreciation. The effect of the considerable drop in the wholesale food price index (*see* above) is apparent in the retail (cost of living) index above.

The indices of individual food groups of the Department of Labour showed notable declines for dairy products, eggs, fruit and vegetables, and fats and oils. The fall in cereal prices was not so great, and meat prices rose from a low level at the beginning of the year.

National Industrial Conference Board Cost of Living Indices (1923 = 100)

	Clothing	Food	Fuel and Light	Housing	Sundries
1937	76 9	86·9	85·2	86·5	96·9
1938					
Jan. .	76·7	82 o	86·3	88·2	97·6
Feb. .	76 o	80·1	86·3	87·8	97·5
March .	75·5	80·3	86·2	87·5	97·8
April	75·1	81·1	85·7	87·2	97·6
May . .	74·5	80·8	83·7	87·0	97·6
June . .	73·9	81·9	83·7	86·7	97·5
July . .	73·5	81·7	84·1	86·6	97·4
Aug. . .	73·4	80·1	84·4	86·6	96·9
Sept. . .	73·3	80·4	85·0	86·6	96·8
Oct.	73 2	79·8	85·6	86·6	96·8
Nov. .	73·2	79·5	85·9	86·4	96·8

Cost of Living: Canada. We have already seen that the general level of the index was higher in 1938 than in 1937. Further details of the constituent items are given now.

Bureau of Statistics Cost of Living Indices (1926 = 100)

	Food	Fuel	Rent	Clothing	Sundries
1937	77·3	84·9	86·9	72·7	93·7
1938					
Jan. . .	78·4	85·6	89 o	73·3	93 7
Feb. . .	77·9	85·4	89·0	73·3	93·7
March .	78·6	85·7	89·0	73·7	93·7
April . .	78·8	85·7	89·0	73·7	93·7
May . .	77·7	85·3	90·3	73·7	93·7
June . .	78·1	84·5	90·3	73·0	93·6
July . .	78·4	84·4	90·3	73·0	93·6
Aug. . .	80·7	84·6	90·3	73·0	93·6
Sept. . .	77·6	84·8	90·3	73·4	93·6
Oct. . .	77·1	85·1	90·1	73·4	93·6
Nov. . .	76·6	85·5	90·1	73·4	93·6

During 1938, the sundries part of the index was hardly changed. The fuel and clothing indices rose slightly on the average. A slight rise was evident, too, in the food figure, but the most important increase was in the rent index. On the whole it may be said that the higher level in the cost of living index reached during 1938 was attributable to rent.

Cost of Living: Germany. There was very little change in the final index for Germany during 1938, and not much variation in the constituent items. The relevant figures are given below.

Cost of Living, All Items (Statistisches Reichsamt) (1913–14 = 100)

	Food	Lodging	Heating	Clothing	Miscellaneous
1937	122·3	121·3	125·3	125·7	142·3
1938					
Jan. . .	121·2	121·3	125·9	128·3	142·6
Feb. . .	121·5	121·3	125·9	128·6	142·7
March .	122·2	121·3	125·8	128·7	142·7
April . .	122·3	121·2	125·5	129·4	142·5
May . .	122·8	121·2	124·1	129·9	142·5
June . .	123·0	121·2	123·1	130·9	142·6
July . .	124·3	121·2	123·2	131·4	142·0
Aug. . .	123·9	121·2	123·6	131·4	142·0
Sept. . .	121·3	121·2	124·5	131·4	142·0
Oct. . .	120·7	121·2	125·1	131·6	142·0
Nov. . .	120·8	121·2	125·5	131·7	142·2
Dec. . .	121·3	121·2	125·6	131·9	142·1

The food index rose slightly during the middle of 1938, but on the average hardly differed from that of 1937. The lodging index was not substantially altered. The cost of heating suffered its usual summer decline, but on the average was not different from that of 1937. The slight increase in the cost of living previously noted was due mainly to a gradual increase during 1938 in the clothing figure The miscellaneous item has fallen very slightly. (E C. RH.)

PRINCE EDWARD ISLAND. In closing the brief session of the 43rd Assembly of the Provincial Legislature on April 22, 1938, the lieutenant-governor gave the royal assent to 42 Bills.

The term of office of the Hon George Des Brisay De Blois as lieutenant-governor, which was due to expire on Dec. 28, 1938, was extended until after the visit of the King and Queen to the province in 1939.

A permanent camp for boy scouts of the maritime provinces has been established on the island and named "Camp Buchan" after the governor-general of Canada The site was the gift of the lieutenant-governor.

Area and Population :
Area 2,184 sq. miles.
Population (est 1937) 93,000 (Indians 233).
Chief Town (pop 1931 census) Charlottetown (12,361).
Premier. Hon. Thane A Campbell, K.C.
Production :

Field crops (1937)	$7,475,000
Dairy produce (,,)	$1,825,127
Fisheries (1936)	$953,029
Water Power (Jan. 1, 1938) developed	2,439 h p.

Manufacturing Industry 1936 :
Establishments, 233 ; capital, $2,394,532 ; employees, 966 ; gross value of products, $3,311,223.
Communications and Transport :
Roads (Dec 31, 1935) total, 3,712 miles (earth 3,500 miles)
Railways (Dec. 31, 1936) 286 miles
Motor vehicles registered (Dec. 31, 1936) cars 7,420 ; commercial 792 ; buses 3 ; cycles 8,231.
Finance :

Revenue, ordinary (1935–36)	$1,718,466
Expenditure, ordinary (1935–36)	$1,743,120
Debt, gross bonded (1936)	$6,029,000

Education : controlled schools (1936) scholars 18,183.

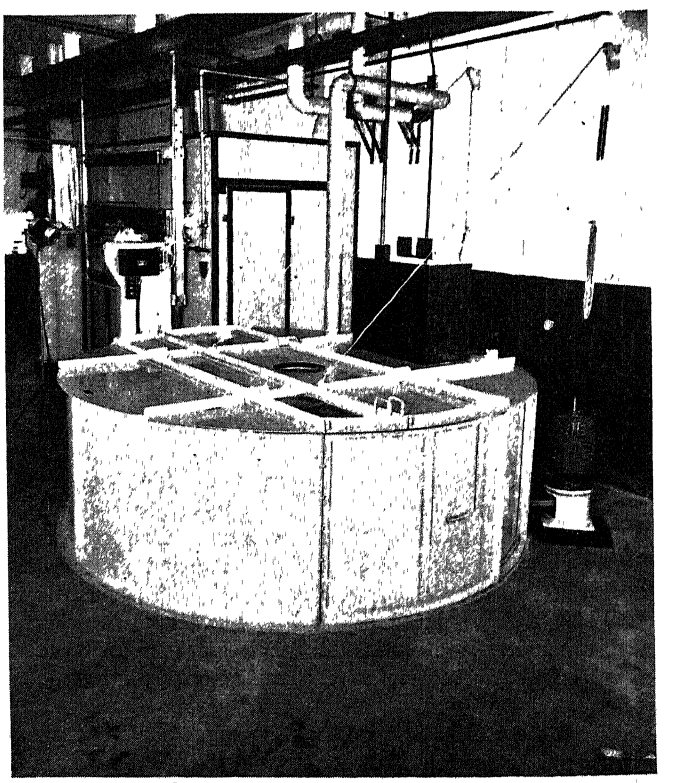
PRINCIPE : *see* PORTUGUESE COLONIAL EMPIRE.

PRINTING. The year 1938 developed nothing startlingly new of any importance in printing equipment, supplies, or methods which could be characterized as invention. In fact, in that respect, it lapsed considerably behind the years closely preceding. There was, however, decided development in two respects, and a moderate spreading out in two or three others.

Offset finally and definitely gained a foothold in the field of newspaper production. When, on Oct. 23, the Trenton (New Jersey) *Times-Advertiser* issued its first sixteen-page pictorial supplement for that Sunday edition, a definite milestone in the progress of printing and publishing was passed. Small-scale tests had been made during 1937 on several "country" papers, notably the Monmouth (Illinois) *Review-Atlas,* utilizing sheet-fed offset presses, and one manufacturer of equipment produced a model offset printed paper to promote the idea ; but the Trenton newspaper is the first of large-edition publications to embrace the process and utilize a large essentially newspaper type of press printing from rolls of paper instead of sheets. The press is capable of producing 12,500 complete folded papers an hour, and of printing from aluminium plates four colours simultaneously on both sides of a web.

Various considerations have brought about the interest in the new type of newspaper production. First, there is the economy of cost of plates of individual pictures. The cost is less than for producing regulation half-tones and line plates for relief printing, which, however, is not as important to newspapers having their own engraving plants as to printers of commercial work, like catalogues and other advertising Progressive newspaper publishers have long sought better pictures, particularly of continuous tone illustrations from photographic copy, which are produced by half-tones. Owing to the essentially rough and low-grade paper used, speed of the presses, and grade of ink, newspaper half-tones are of necessity coarse, of, say, sixty-line screen, which means sixty raised dot printing surfaces to the inch or 3,600 to the square inch. Detail is what makes for excellence in continuous tone illustration, and the finer the screen pattern, the finer and more definite the detail. By the indirect method of offset or planographic printing, the press plate depositing ink on a rubber cylinder and the ink deposited there being immediately applied to the paper by a third cylinder, plates of 200 dots to the inch or 40,000 to the square inch may be printed on newspaper stock. Therein lies the lure of offset to the publisher. The planographic method, as the name implies, denotes printing from a plane surface. Whereas in relief printing ink is taken off high points (the design), ink is taken from the offset plate where water will not adhere, portions outside the design holding water in tiny "pores" resisting the ink.

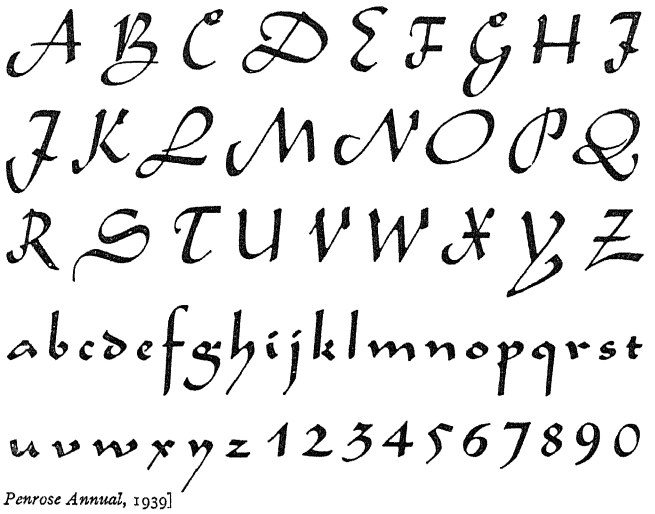
There was a deterrent factor. The life of the regular offset plate was not adequate in relation to the press run of the paper of large or reasonably large circulation Often such a plate would last for no more than 10,000 impressions, sometimes less. However, the rather recent development of the so-called deep-etch offset plate greatly increased the enduring qualities of the press plates and gave added



Penrose Annual, 1939]
HENDERSON PHOTOGRAVURE PROCESS: CYLINDER COATING MACHINE, CLOSED AND IN OPERATION



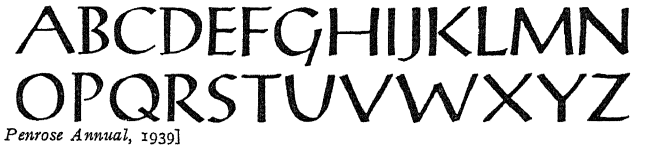
Penrose Annual, 1939]
LILITH, BAUER TYPEFOUNDRY, FRANKFURT A. MAIN



Penrose Annual, 1939]
LEGEND, BAUER TYPEFOUNDRY, FRANKFURT A MAIN



Soldan]
ELIZABETH, BAUER TYPEFOUNDRY, FRANKFURT A. MAIN



Penrose Annual, 1939]
POST-ROMAN, BERTHOLD TYPEFOUNDRY, BERLIN

SPECIMEN LINES OF DISPLAY TYPES PRODUCED DURING 1938

impetus to the idea of offset for newspaper production Other newspapers are contemplating use of offset, as the one at Trenton contemplates extending its use to other sections of its publication.

The second development is also to be found in newspaper production. A news picture in full colour appeared for the first time in the edition of the *Chicago Tribune* for Jan. 7. Such full-process colour pictures have been appearing in newspapers for years, but have been in advertisements and in Sunday supplements, plates being made much in advance of the day of publication. The *Tribune* achievement is in the fact that the picture plates were made during the work day on which the news "broke". The result rather indicates that it will not be many years before each edition of a daily metropolitan newspaper will carry a number of news illustrations in full colour.

With offset printing in the ascendancy during recent years the letterpress or relief printing shows signs of new life. Great progress has recently been made in the form of a new non-metal half-tone printing plate which has opened a new field for printing, particularly on short runs, black and white work where the cost of plates is an important factor. This plate is known by the name "Ebolite" and can be produced at lower cost than the regular copper half-tone. These Ebolite half-tones may be electrotyped, but cannot be stereotyped.

With new and cheaper rubber plates, with new non-metal plates, with improved high-speed presses, with improved quick-drying inks, and with new rotary job presses, the letterpress printer seems bent upon putting up a stiff fight against offset.

New equipment by which type-set forms may be cast in rubber, making plates to be used in place of electrotypes and stereotypes, forecast rubber as perhaps the present dominant factor in relief or letterpress printing. The merit of the idea is in the fact that the process of preparing a form for press, the drag on letterpress in competition with offset, will be greatly reduced—in short, the preparatory time cut to that now required for getting a form running on an offset press. The secret is in the resiliency of the rubber material of the plate which accommodates itself to the unequal paper surface and compensates for the inequalities of height of the different elements in the master form which is moulded. With such plates in curved form applied to rotary presses, the same speeds are obtainable as on offset presses, which in contrast with prevailing relief presses—apart from those used for magazines and newspapers—are of the flat-bed type which cannot be operated at the speeds of rotary presses.

The opinion is growing that rubber will prove the salvation of letterpress (relief) printing. (J. L. F.)

PRISONS: *see* PENAL REFORM.

PRIVATE SCHOOLS: *see* SECONDARY EDUCATION.

PROTESTANT EPISCOPAL CHURCH: *see* ANGLICAN COMMUNION, THE.

PROTEINS: *see* BIOCHEMISTRY.

PROTESTANTISM, NON-EPISCOPAL. The Nonconformists of England include Methodist, Baptist, Congregational and Presbyterian Churches, as well as some less numerous communities, such as the Society of Friends and the Moravians. Most of them are united for common witness and service in the Federal Council of the Free Churches of England, a strictly representative body appointed by the governing bodies of the affiliated Churches. The National Free Church Council is a popularly elected body, without direct responsibility to the denominations. In view of the confusion caused and a measure of duplication, negotiations are proceeding for the unification of the two organizations in one Federal Free Church Council, and it is hoped that a scheme will be placed before the Churches in 1939. In Scotland, Presbyterians compose the Established Church, and in Wales, since no Church is established, strictly speaking no nonconformists exist. But the protestant non-episcopal Churches, along with the Moravians and the Friends, are deeply and increasingly conscious of a community of faith and interest and are continually drawing closer together.

Though organic union is not yet within sight, a United Free Church of England is an ideal cherished widely, and the Churches are seriously considering closer relations and co-operation. Conversations with this object are proceeding between Congregationalists and Presbyterians, while the Methodists, who a few years ago consummated the union in one Church of three sections of Methodism, are successfully consolidating their work. Baptists in Britain, as in other countries, find it difficult, in view of their special tenets, to contemplate union, but are increasingly ready to work whole-heartedly with other Churches. Intercommunion, interchange of pulpits, and full recognition of one another's ministries are general among the Free Churches.

The prospect of union with the Church of England and the other Churches associated with it through the Lambeth Conferences and the Pan-Anglican Congress, still appears remote, mainly because of differing conceptions of the ministry and sacraments. Nevertheless, old prejudices and misunderstandings are rapidly disappearing, and interchurch relationships are most cordial, while over a wide area, both in relation to foreign missionary work and to evangelism and social service at home, the Churches constantly work together.

Methodists will be consummating in April 1939 the union of their two greatest branches in the United States. In France, three Presbyterian Churches and the Methodists have brought about a reunion of the old Reformed Church of France with about a million members. In the U S.A., Presbyterian and Protestant Episcopal Churches are seeking a path to union.

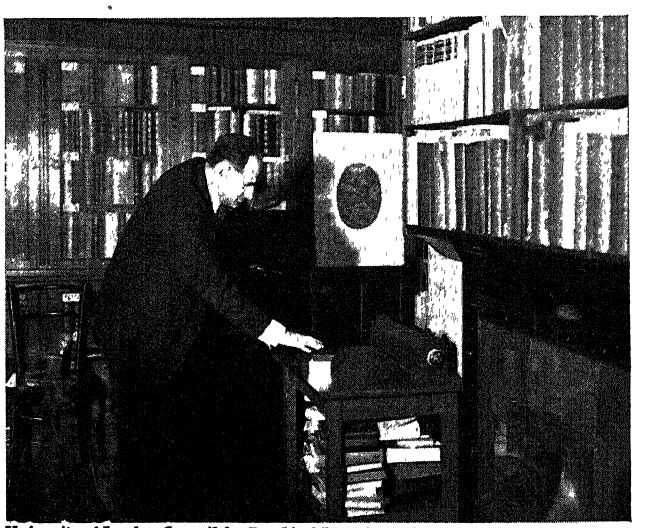
The denominations are growingly conscious of their own world-wide witness and unity, but the British Free Churches are also all taking their full part in the Christian Œcumenical Movement with its two sides represented by "Life and Work", dealing with the actions of the Churches to those moral and social questions which take an ever-larger place in their thought, and "Faith and Order", which studies their agreements and divergencies in religious belief and practice. The Conferences dealing with these matters, held at Oxford and Edinburgh respectively in 1937, have been closely followed, and plans are being studied to conserve the results in a World Council of Churches, both episcopal and non-episcopal, which it is hoped to form in 1939, and also in a British United Council to relate the message of the Churches to the common life of the community.

The Free Churches, while, for the most part, resolutely opposed to any form of State-control of Church activities and to establishment, are perhaps more insistent than they ever were on the necessity for the recognition by the State of the religious life and needs of the community. Recent happenings on the continent of Europe have intensified their stress on religious freedom. They have been deeply moved by the arrest and confinement of Pastor Martin Niemoller and others of the Confessional Church in Germany, and by the disability and suffering of their co-religionists in Russia and Rumania. In their thinking a swing to the right, to some extent under the influence of Karl Barth, the Swiss theologian, and of Emil Brunner, has recently been noticeable. In England Principal John Whale, of Cambridge, has been the exponent of a neo-Calvinism which, though by no means identical with theirs, has found a widespread response.

The move toward a thorough-going pacifism which in recent years has been a conspicuous feature, appears for the moment to be arrested, but the emphasis on evangelism, the duty of taking the Christian message to the whole world and of applying it fearlessly to moral and social conditions, is continually becoming stronger, and in this it appears that British nonconformists are in full accord with those who share their beliefs in other lands. Not for centuries have these Churches seemed to feel so vividly that they are facing what may accurately be called a crisis, and they are anxiously trying to utilize their resources of scholarship and religious experience to meet it. (M. E. A.)

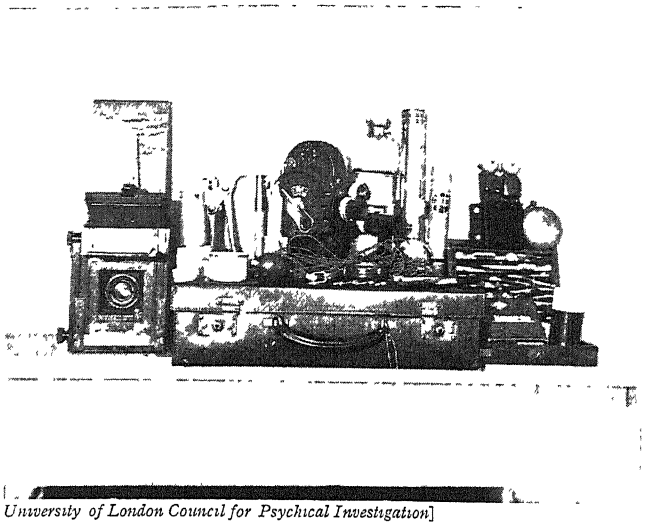
PSYCHICAL RESEARCH. Whether or not "extra-sensory perception" (telepathy, clairvoyance) has been scientifically proved is still the chief concern of psychical researchers in both Great Britain and the United States. Dr. J. B. Rhine of Duke University has published a further account [1] of his successes, and claims to have achieved results which demonstrate that the paranormal transmission of thought is an established fact. Out of 25 unseen Zener cards, a student named Linzmayer, at the first attempt, called nine symbols in succession correctly. The next day he did the same thing. The odds against such a feat are astronomical.

The chief critics of the Rhine technique in the United States include Professor Chester E. Kellogg [2] of McGill University, Dr. Steuart Henderson Britt, and Dr. Eugene



University of London Council for Psychical Investigation]

TESTING EXTRA-SENSORY PERCEPTION. JOSEF MARION, THE CZECHO-SLOVAKIAN HYPERÆSTHETE, ATTEMPTING TO "SENSE" A HANDKERCHIEF HIDDEN IN ONE OF SIX IDENTICAL TIN BOXES



University of London Council for Psychical Investigation]

APPARATUS USED BY AN INVESTIGATOR OF HAUNTED HOUSES, INCLUDING TOOLS FOR SEALING DOORS AND WINDOWS, SECRET ELECTRICAL CONTROLS, POWDERED GRAPHITE FOR FINGER-PRINTS, ETC.

Adams. In England, Professor R. H. Thouless and S. G. Soal (who continues, without success, in his attempt to duplicate the Duke results) are the principal opponents of the American claims.

Another controversial subject—dowsing—is attracting much attention in England and France, and in the former country a report on three years' research work is being published. It is by two scientists, T. Bedford Franklin and J. Cecil Maby, whose experiments suggest that water, minerals, metallic lodes and, in fact, everything give off rays which can be " sensed " by the diviner. Their theory is that some universal source of energy is responsible—perhaps the cosmic ray. Though dowsers differ among themselves as to whether their reaction is mental or physical, Franklin and Maby's tests " all point to a change of muscle tone due to electrical effects ", that is, it is physiological.

Spiritualists fared badly in 1938. In Germany, Sweden, and Rumania, official spiritualism has been suppressed by law. In England, a *Bill for the Regulation of Psychic and Occult Practices* has been drafted. The Bill [3] seeks to amend the law concerning mediumship; to suppress charlatanism; and to protect the public. In Germany, the Third Reich has sanctioned the founding of a Department for Abnormal Psychology and Parapsychology (*Forschungsstelle für psychologische Grenzwissenschaften*) at Bonn University. In Italy, too, psychical research has been recognized by the formation of the new scientific Società Italiana di Metapsichica in Rome, with Professor Ferdinando Cazzamalli as president.

The literary event of 1938 was the solving [4] of the Versailles " visions " seen by the Misses C. F. Jourdain and Anne Moberly, whose *An Adventure* (1911) became a classic.

In 1938 psychical research lost by death: Professor William McDougall, F.R.S., a former president of the British S.P.R., Dr. Eugène Osty, Director of the Institut Métapsychique, Paris, and Cesare Baudi di Vesme, for many years editor of the *Annales des Sciences Psychiques*.

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(H. PE.)

PSYCHOLOGY. Under this heading are included both theoretical and applied psychology, and also a survey of physiological and social psychology.

Theoretical. Further consolidation and advance in theoretical psychology, as well as intensification of research in respect of analysis of the factors entering into processes of cognition and into the constitution of temperamental types, are the chief points to be noted during 1938. One outstanding event of the past few years has been the calculation of the results of the " Chicago experiment ". This experiment was undertaken by an international committee under the chairmanship of Professor Thorndike, of Columbia University, New York. In it 11,000 children of ages ranging from ten to seventeen years were given no less than 94 tests covering perception, thought, memory, creative imagination, and attention, as well as scientific ability, linguistic talent, social understanding, æsthetic taste, and " general information ". Tests of speed in mental and muscular work were also included in the battery. All the testees had been under observation beforehand, and had also been measured for " intelligence " by three well-recognized tests. Many of the statistical calculations have been worked out under the direction of Holzinger, who has already made nine interim reports on the investigation from which the following results reached may be noted. (1) What is known as G (general mental ability) is involved in the performance of *all* the tests, including even those of motor activities, such as rapidity of tapping and compressing a dynamometer, though in these, as also in that of memory (retentivity) and fluency tests, it is extremely low. (2) The highest saturation (amount) of G is evidenced in the visual perception of spatial relations (80 per cent) and in generalizing from particular data (65 per cent). (3) " Imagination " turns out to be ambiguous, signifying either (*a*) relational invention of new ideas, or (*b*) calling up visual, or other, images as in reverie or day-dreaming. The first has an exceedingly high G saturation, the second practically none. (4) No general factor of memory appears; but there are group factors of memory, as well as of linguistic, scientific, and practical ability, speed of performance, and fluency. These findings are corroborations on a large scale of conclusions already reached by Spearman. Further calculations and interpretations are in progress (*Preliminary Reports of Spearman-Holzinger Unitary Trait Study*, Chicago, 1934–36; Holzinger and Harman, " Comparison of Two Factorial Analyses ", *Psychometrika*, 1938; Spearman, *Psychology Down the Ages*, London, 1937).

Parallel with this development of research into cognitive factors by tests and the use of statistical analysis, an increased interest has been manifested in the statistical investigation of character and temperamental types. A report (No. 83) summarizing the methods previously employed in this inquiry was issued by the Medical Research Council Industrial Research Board on " A Survey of Attitude Scales, Tests and Personality Questionnaires ", by P. E. Vernon (H.M. Stationery Office, 1938).

Using 124 delinquent and neurotic children as " population ", C. Burt calculated the correlations and covariances between primary emotional traits. He found four factors sufficient to account for the correlations, and two for ninety per cent of the variance. Correlations between traits and persons led to postulation of the same factors and coefficients. The type to which each factor contributes is specified by its saturation coefficient. The approximation to type of the persons is measured by their saturation

coefficients. Besides a factor of general emotionality, already reported by Burt (" General and Specific Factors underlying the Primary Emotions ", *Brit. Ass. Ann. Report*, 1915), he now finds two bi-polar factors accountable for (1) aggressive–inhibitive, and (2) pleasurable–unpleasurable emotions. But only small correlations obtain between temperamental and physical characteristics, such as those advanced by Kretschmer. These are so small that they are nearly always untrustworthy for diagnostic use, except in the case of extreme types (" The Analysis of Temperament ", *Brit J. of Med. Psych.*, xvii, 2, 1938). Further, as yet unpublished, work carried out at Bethlem Royal Hospital corroborates this view

Continuing his analysis of the declining national level of intelligence (approximately one point of I.Q. per decade), R. B. Cattell indicates possible social results ensuing from this. These include a fall in the academic standards in schools, changes in curricula towards less abstract studies, increased cost of education and further unemployment, decrease in earning capacity of the community, rise in incidence of individual delinquency and aggression between nations, as well as in the percentage of people holding extreme political viewpoints, shift of cultural interests to cruder tastes and forms of expression, and a check to social and political freedom (" Some Changes in Social Life in a Community with a Falling Intelligence Quotient ", *Brit J. of Psych.*, xxviii, 4, 1938 ; *cf.* also *Eugenics Review*, xxiii, 3, 1936 ; *ibid.*, xxix, 3, 1937).

A large-scale telepathic experiment was carried out by a radio corporation, with the co-operation of a number of psychologists in America. Part of this consisted of the announcement of five consecutive results of spinning a ball on a roulette wheel where the chances of turning up black or white were equal. All listeners were asked to concentrate on the colour announced for five seconds. The co-operating psychologists, isolated from any possible wireless, were warned by a signal as each period of concentration began, and noted the colour of which each of them thought. On one occasion all the five colours happened to be black ; and the results seemed to point to success. They were, however, tested by a further experiment carried out at the University of Pennsylvania, in which 700 students participated. The instruction given was that the experimenter would think of black or white, and that the testees were to " guess " what it was. Five such consecutive " guesses " were noted. But, instead of thinking of a colour, the experimenter carefully refrained from doing so. Nevertheless, comparable data were obtained, a higher percentage of " blacks " for the first guess, a lower for second and third, whilst fourth and fifth were slightly higher again. The results in both cases can easily be explained on known psychological principles : (1) a mental perseverative tendency due to the instruction " black or white " (ideas familiar in that order), and (2) the tendency to avoid the repetition of the same judgment in a series of judgments. There is no need to invoke a telepathic explanation (S. W. Fernberger, " Extra-Sensory Perceptions or Instructions ? ", *J. of Exper. Psych.*, xxii, 6, 1938).

An interim report of the Committee of the British Association, appointed in 1932 to consider the possibility of quantitative estimates of sensory events, was presented at the Cambridge meeting of the Association in 1938. This valuable document contains (1) an historical statement on the measurement of sound sensation, (2) a summary of experimental work done in the Laboratory of Psychology, Cambridge, (3) a criticism by a physicist of the possibility of measuring sensations, and (4) notes on the criticism by leading physicists and psychologists. No common agreement was reached ; but in view of the interest, importance, and value of the matter, the committee was reappointed (" Quantitative Estimates of Sensory Events ", *Proc. Brit. Ass.*, 1938).

At the Fourth Annual Congress for the Unity of Science, held in Cambridge in July, the chief topic was the unification of scientific language ; and a special session was devoted to the discussion of fundamental problems of objective psychology, and to psychological terminology.

Applied. *Elements of Normal Psychology* has been included in the syllabus of the pre-clinical subjects required for the first professional examination of the Medical Conjoint Board, the regulation to come into force after July 1, 1939.

There has been a considerable increase in the number of child guidance clinics under educational authorities throughout the country, and of the appointment of psychologists to posts connected with them. There has also been a notable increase in demands for the service of vocational guidance offered by the National Institute of Industrial Psychology.

A detailed survey of " The Problems of Mental Disability in England ", by Madison Bentley, appears in the *Amer. J. of Psych.*, li, 1938

Professor Sigmund Freud now resides in London, and in 1936 was elected a Foreign Honorary Fellow of the Royal Society. The Warren Medal was awarded to E. Culler, University of Illinois, for his work on the mechanisms of hearing and the conditioned reflex. (F. A.)

Physiological and Social. Remote as are the exact sciences from the battle of life, they are not wholly impervious to the society in which they exist. Psychology as the discipline which bridges the gap between the natural sciences and the social studies cannot help but be affected by the social forces of the times. Under the impact of the economic and political crises of the past ten years psychologists the world over have been reorienting their programmes of research. During 1938 this reorientation has assumed new proportions in its emphasis upon the integrated behaviour of the human being. Where once the problems under investigation were dominantly physiological or elementaristic in nature, a good part of the research in the past year has been concerned with the individual less as a biological organism and more as social being. For example, of the 178 papers read before the annual meetings of the American Psychological Association last September over half were devoted to the social functions of the individual. In other words, child psychology and social psychology, formerly regarded as special branches of applied psychology, have become an integral part of general psychology. The tail has almost begun to wag the dog.

The increased interest in social functions has been at the expense of sensory and physiological psychology only from a relative point of view. In terms of absolute production there is as much, if not more, work along sensory and physiological lines as ever. This is possible because of the continued growth of psychology as a whole.

Two outstanding books in experimental psychology during 1938 were R. S. Woodworth's *Experimental Psychology* and S. S. Stevens' and H. Davis' *Hearing : Its Psychology and Physiology*. Woodworth's imposing work is a critical summary of the research findings of laboratory psychology. For many years the student had been without a unified exposition of the traditional subject matter because no one

author had been able to bring together the technical results of the many specialized branches. Woodworth's success in synthesizing experimental material represents a genuine achievement in the progress of psychology The work of Stevens and Davis is a competent treatment of the auditory field, somewhere between the textbook level and the level of the handbook.

Recent advances in the psychology of audition are exemplified in the research of E. G. Wever and C. W. Bray, who have applied their electrical technique to problems of the functioning of the separate parts of the middle ear, to the distortion of sound in the cochlea, and to the comparison of the cochlear responses of different animal species. Among other findings these investigators report that the tensor tympani muscle has a protective function in reducing the intensity of sound reaching the cochlea; that the destruction of the ossicular chain reduces sounds, picked up in the cochlea, a hundredfold in cases of tones of low pitch and a thousandfold in cases of tones of high pitch; and that pure-tone stimuli are distorted at some point in the auditory system by the addition of subjective harmonics.

The reorientation in psychological research toward problems of integrated conduct has been productive of a voluminous output in the child, abnormal, and social fields. N. L. Munn has presented an excellent summary of research in the developmental field in his *Psychological Development*, and R. LaPiere in his *Collective Behaviour* and D. Katz and R. L. Schanck in their *Social Psychology* have attempted to carry the psychological approach into the complex issues of social life. The study of personality has been advanced by H. Murray's volume, *Explorations In Personality*, which makes available the many investigations of the Harvard Psychological Clinic. The importance of this volume is primarily methodological with its account of techniques for studying the phantasy life of the individual. Coming on the heels of another methodological contribution, G. W. Allport's *Personality*, it has called for a reconsideration of positivism in the field of human relations.

The interest in man as a social being has kept alive the old nature-nurture controversy concerning the extent of the inherited and environmental determination of human capacities and conduct. Knowledge of the genetic nature of intelligence has been increased through better control of the variables of heredity and environment—a control made possible by the use of identical twins and by careful measurement of environmental factors. The answer afforded by these methods has favoured the position of the geneticist more than that of the environmentalist. Thus H. H. Newman, F. N. Freeman, and K. J. Holzinger report that nineteen pairs of identical twins separated from infancy show an average difference in I.Q. of only eight points with a correlation of test scores of about ·70. Consolation for the environmentalist can be found, however, in the puncturing of the old contention of the constancy of the I.Q. B. Wellman has shown that children subjected to a stimulating school environment improve their mental test scores, and similarly that children after a period of life in unfavourable surroundings will drop in test performance. Moreover, in the Newman-Freeman-Holzinger study the identical twins who had grown up in more divergent environments were farther apart in I.Q. than the twins reared in more similar environments.

There is a growing tendency, however, for the old nature-nurture dispute to give way to the study of the specific effects of particular environmental contexts upon qualities of conduct. O. H. Mowrer compared a group of institutionalized children under a year's regime of authoritarian discipline with the same group under a year's regime of guided self-government Authoritarian rule was accompanied by aggression toward one another and by latent hostility toward adults. Democratic participation reduced symptoms of repression and hostility and increased the amount of co-operativeness and friendliness in the group. Similar results have emerged from the experiments of K. Lewin, R. Lippit, and R. K. White, who found that in an autocratically controlled group about thirty times as much hostility was expressed between members as in a democratic group. In the democracy, moreover, the group structure was more stable and the feeling for group property and group goals was better developed. Similar developmental studies are in process to discover the genesis of leadership, of introversion, of suggestibility and other important traits of the social man.

The nature, motivation, and genesis of men's beliefs and attitudes are receiving more and more attention from the psychologist Prestige suggestion as a source of attitudes is an old principle, but during 1938 its application to all provinces of belief were painstakingly demonstrated. Similarly, the many implications in the old doctrine of the wishful nature of thinking are being thoroughly explored. Thus, D. M. McGregor and H. Cantril have found that people's predictions of future events are a function of what they want to happen. The dispute concerning the specificity and generality of attitudes is being decided against the extreme specificist. An extensive investigation by R. Likert and G. Murphy has confirmed the emphasis of older studies upon generalized patterns of social and political beliefs. Finally, the work of E. L. and R. E. Horowitz illustrates how attitudes and prejudices are taken over ready-made from the social group.

The methodological contributions of F. H. Allport to the measurement of conformity in his J-curve hypothesis have been bearing fruit in studies of institutional beliefs and practices. Uniformities in social behaviour are the product of loaded factors of man's own making and hence do not follow the pattern of the normal curve which appears so frequently in biological measurements.

The effects of the group upon the quantity and quality of the individual's motor and mental performances are being analysed according to the specific variables involved. The older finding of A. Jenness that group discussion does not increase the accuracy of the average judgment of group members has been qualified rather than upset by the work of R. Thorndike, who reports that, when a wide variety of responses is present in the original judgments, discussion improves accuracy. Under the influence of majority opinion individuals alter their beliefs but they are less likely to change their opinions when they are right than when they are wrong. (D. KA.)

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PUBLIC ASSISTANCE. Throughout 1938 the policy of the Unemployment Assistance Board, which since Jan. 1, 1935, has been responsible for maintaining unemployed persons who have exhausted their insurance rights (see *Ency. Brit. Book of the Year*, 1938, p. 523), has been to eliminate local disparities in allowances—a legacy from the superseded local Boards of Guardians. According to the Board's third annual report (June, 1938), much progress has been made in bringing these allowances into conformity with the general provisions of the regulations approved by the House of Commons in Nov. 1936 The "standstill" between the former local rates and the national allowances that were intended to replace them had kept in being differences in the standard of assistance which could not be justified on any reasonable grounds; and a feature of the administration of the Fund during the year was the increasing use made by officers of their power to adjust assessments in the light of any special circumstances. Scales and definite rules affording guidance in the treatment of the normal case, and establishing standards by reference to which substantial equality can be secured as between cases of like kind wherever and however arising, are recognized as being necessary; but the discretionary powers of the Board's officers were exercised, under instructions from the Board, over a wide field in the winters of 1937–38 and 1938–39 in order to meet the hardship caused by seasonal exigencies such as the weather and rising prices. In the former period additions to normal assessments were made in more than 250,000 cases, and in at least as many in the latter; but in both, especially in the 1938–39 winter, much dissatisfaction was caused by the alleged inadequacy of winter relief, and in London and other large cities many street processions and demonstrations were organized.

The expenditure in 1937, the latest year for which statistics are available, on unemployment assistance was £41,420,000 (of which £36,740,000 represented allowances), an increase of more than £2 millions compared with 1936, but a fall of more than £1 million compared with 1935; the number of applicants for relief at the end of Dec. 1937 was 570,000, a decrease of 60,000 compared with the corresponding period of 1936.

One of the most regrettable conclusions reached by the Board's officers during 1938 was that many applicants completely lost interest in their future and were content to remain on unemployment allowances. Lord Rushcliffe, chairman of the Board (formerly Sir Henry Betterton, Minister of Labour, 1931–34), in his foreword to the latest annual report says, "There are those whose unemployment is due to wilful idleness, who avoid or refuse work when it is obtainable, or throw up jobs on some flimsy pretext. The percentage of such cases to the total dealt with is small, but the number is sufficiently large to cause the Board much concern"—a conclusion that was bitterly challenged during the year by spokesmen of the organized workers. The Board also stated that some 30,000 applicants were nearly as well off with the Board's allowance as when engaged in their normal work. This statement, if justified, is a serious reflection on the low wages still being paid in some industries, for the average weekly payment in Dec 1937 was 24*s* 7*d* (that for the whole year was 24*s* 3*d*), showing little change from 1936, but an increase of about 1*s* 3*d* a week compared with 1935. (V B.)

The Works Progress Administration of the United States under a wide variety of methods aims to maintain the morale of the unemployed and to preserve the consumptive power of purchasers. The Civilian Conservation Corps at its best adds wholesome discipline and out-of-door work. Both are financed entirely by Federal Funds (except provision of materials for WPA projects). In Canada, the Federal government makes grants-in-aid to the provinces for unemployment and drought relief, the Provinces in turn making grants to local units. The cost of relief for other forms of distress is borne by each locality, although the distinction is not strictly enforced. Seventy-five per cent of the cost of old-age pensions and of aid to the blind and 50 per cent of mothers' pensions is met by the central government. In Australia, the central government follows the same policy as Canada respecting unemployment relief, but leaves other forms of relief entirely to local responsibility. In the United States, the Federal government makes no grants-in-aid to States for relief, other than to the aged and the blind, of which it assumes half the cost, and dependant children, of which it assumes one-third of the cost. General relief is left with local authorities, although in a few jurisdictions the State may assume some or all responsibility for the cost of local relief

In Canada only a guess can be made as to the numbers of beneficiaries or the amounts spent on general relief, as they are handled by the separate provinces and their localities without central reporting. In the United States, the various States and localities spent $478,201,000 during 1938 on an average of about 1,850,000 beneficiaries at any one time, compared with $402,411,000 spent on an average of about 1,430,000 beneficiaries in 1937.

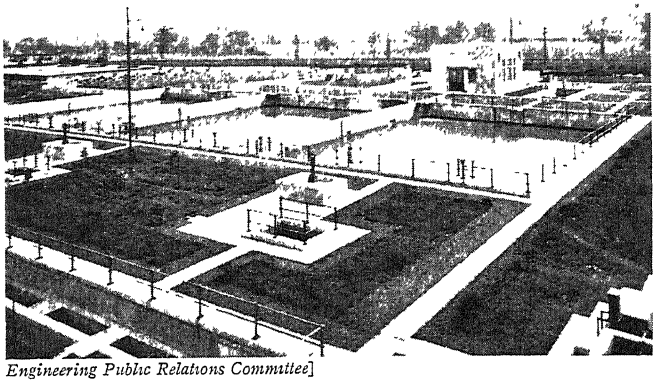
In unemployment relief, the central authority of Australia spent £482,880 in grants-in-aid to the States, and also loaned them "about £12 millions" for public works designed to absorb the unemployed. Canada made grants-in-aid to the provinces, in behalf of the unemployed and the victims of the drought to the sum of $53,695,474·03, of which $19,272,150 was for direct relief and the rest for various work and training projects. In the United States the WPA spent $1,465,371,000 on giving work to the unemployed in numbers which varied from 1,474,000 in Nov. 1937 to 3,139,000 in Oct. 1938, a record figure in expense and beneficiaries, compared with $1,306,610,000 spent for beneficiaries numbering from 1,407,000 in Sept. 1936 to 1,723,000 in Feb. 1937.

Australia has made provision for the aged since 1908, but recent figures are not available. In Canada 180,000 old-age pensions were granted, whereas in the United States 1,751,000 persons received old-age assistance in Oct. 1938, and the cost for the year was $882,471,039. A careful estimate made of the annual outlay on public welfare in Canada places it at $250 millions.

(*See* also NATIONAL INSURANCE; UNEMPLOYMENT.)

See Annual Report of the Ministry of Health (1938) and Report of the Unemployment Assistance Board (June 1938), both published by H.M. Stationery Office, London; also the (U.S.) *Social Security Bulletin*, vol. 1, No. 12, Dec. 1938; Report of the Dominion Commissioner of Unemployment Relief (Ottawa, 1938).

PUBLIC HEALTH ENGINEERING. Air conditioning, in its broadest sense, holds a large share of the attention and interests of sanitarians. The physiological reactions of



Engineering Public Relations Committee]
TYPICAL SEDIMENTATION TANKS OF A MODERN SEWAGE DISPOSAL WORKS

man to various air environments; the relation of these environments to health, comfort, and occupational efficiency; the possibility and the evaluation of the relative importance of aerial transmission of disease; and the bacteriology of air in occupied places, and its relation to ventilation treatments, are all being studied intensively. The employment of ultra-violet light to reduce the level of bacterial contamination, first used successfully in the operating rooms of hospitals, has been extended to the prevention of cross-infection in contagious disease wards, as reported by Long and McKhann at a recent convention of the American Public Health Association. Lamps are now being marketed commercially for use over dish-washing sinks in eating places, in cold-storage rooms of markets and elsewhere. The momentum of this movement will doubtless carry it beyond the point of ultimate normal development and public health interest, but real progress is being recorded and future standards will doubtless recognize bacterial contamination and its control as a factor in hygienic air conditioning.

Water Supply. There appears to be a growing appreciation in many quarters of the world of the value and natural limitations of water supply resources, and of the necessity for their conservation, reclamation, and systematic development. *The Surveyor* (London) reports a continuous increase in *per capita* demand for domestic water throughout Great Britain and a classification and evaluation of resources through the work of the Hydrographic Survey. London's consumption has reached 400 million gallons (Imp.) per day at present, and even this may prove inadequate in the future. The British Water Works Association is devoting attention to the prevention of stream pollution and to improved methods of water purification. Both it and the American Water Works Association are increasingly concerned over the economic significance of corrosive water.

In Continental Europe similar problems have arisen. In Germany, increasing attention is being given to the reclamation of streams, now given over largely to waste disposal, from which present or future public water supplies must be taken. Paris is extending its supply by the development of ground waters. The Netherlands depends upon polluted streams to supply its principal cities, Amsterdam and Rotterdam, but some water is derived from deep sandstones and some from the dunes. International boundaries complicate the problem of stream pollution, and salt waters lie inconveniently close to developed strata in both types of ground waters. Sweden enjoys lake supplies of good quality and apparently of adequate quantity for future needs.

In the United States, high *per capita* consumption, two to three times that in Europe, largely counterbalances the advantage of larger streams. The general use of streams for waste disposal further reduces the margin between supply and demand for domestic use. The water resources committee of the National Resources Committee is completing a nation-wide survey of sources, quality, present use, and future needs as a preliminary step in a programme of conservation and reclamation.

Sewage and Waste Treatment. With increasing interest in stream conservation, there is corresponding activity in preventive measures. In the United States, extensive use is being made of emergency relief money in assisting local authorities to construct sewage treatment works. In New York city, for example, it is proposed to allocate $25 millions of Federal funds to the construction of works for the reclamation of harbour waters. A large-scale programme of reclamation is likewise in effect in certain areas of the Ohio River basin where objectionable acid pollution results from the drainage of worked-out coal-mines

In Great Britain and Europe generally, there are similar indications. In fact, the present situation is quite the opposite of the oft-quoted vicious circle. Pressing needs have resulted in stimulation of research, resulting in more economic methods of treatment. This, in turn, has permitted the reclamation of valuable resources and increased the demand for purer natural waters. A striking evidence of this trend in the United States is the ever-increasing use of and demand for clean waters for recreational purposes. Sewage treatment is being mechanized, and with this increasing use of mechanical equipment, there is a trend towards the use of a variety of chemical reagents. The art of sewage treatment has come to be an industrial chemical process, even to by-product recovery (fuel gas).

In the city of New York, the Wards Island plant, put in operation in Oct. 1937, is treating about 200 million gallons per day by the activated sludge process at a cost (operation and maintenance) of $11.70 per million gallons, or $0.59 *per capita* per annum. Electrical energy used by the plant itself (excluding high lift pumps) amounts to 509 kwh. per million gallons. At the Coney Island plant, in chemical precipitation and sludge digestion, the recovered gas is used to generate 200 kwh. of electrical energy per million gallons treated. In many places, the recovered energy is adequate for all power purposes in the treatment process.

Housing. A League of Nations Committee report upon environmental conditions of adequate housing contains a valuable summary of the extensive literature, completely annotated. The substance of this report is contained in a report of a committee of the American Public Health Association, in which the essentials of housing are set down. Briefly summarized, they are: *Fundamental Physiological Needs.*—Temperature control, pure air, sunlight, artificial light, low noise level, space for play. *Fundamental Psychological Needs.*—Privacy, cleanliness, and æsthetic satisfaction in surroundings of home and community life. *Fundamental Health Needs*—Safety from contagion, fire, and accident; adequate and safe supply of water and food; and freedom from vermin; refrigeration, washing, and other household facilities.

In Britain, the British Housing Research has, through many years of study, likewise rather fully standardized the minimum requirements. There are still, however,

many housing problems in the colonies, the housing of the Eurafricans and higher-class natives of South Africa has led to a similar study by T S. Higgins. Minimum requirements are low-priced rental, space—preferably out of the cities, transport to places of employment, food markets, and churches. D. B Blacklock likewise reports upon tropical housing in his presidential address before the Royal Sanitary Institute, and R E Andrews has studied the problem with reference to Malaya

Air Transport and the Public Health. The aeroplane has shortened distances and removed barriers in other than purely military aspects The possibility of transporting mosquitoes of undesirable species, as well as human beings infected with, and in the preliminary incubation stage of, such diseases as yellow fever, is giving increasing concern The International Sanitary Commission for Aerial Navigation has attempted to cope with this problem by certain rules designed to reduce mosquito transference to a minimum while demanding the briefest possible detention of passengers Methods of sterilizing aeroplanes were demonstrated by Imperial Airways in June for members of the medical profession, and in October to the Press

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PUBLIC HEALTH SERVICES. The position which institutions for teaching and research in preventive medicine may occupy in relation to public health administration is raised by the report of a meeting of directors of Institutes and Schools of Hygiene, held in Geneva at the instance of the health organization of the League of Nations.[1] It appears that while there is little scope for executive public health work by an organization such as the London School of Hygiene in England and Wales, with its highly organized statutory services, the position is different in some other countries. In Budapest, for instance, the Institute of Hygiene is both a school of hygiene and a technical organ of central health administration. At Nancy, Cluj, Jassy, and Bucharest, university institutes have combined forces with regional institutes of hygiene, and are supported by, and serve, the local health and education authorities. In Zagreb and Athens the schools are especially active in the field work of public health. The meeting expressed the opinion that the teaching staffs of institutes and schools of hygiene should be in direct contact with health and allied services, either by taking an active share in their work or through close and regular liaison.

In the colonial areas of Africa this close interlinkage between education, research, and both curative and preventive medicine has proved the most practicable line of development. The type of organization is exemplified by the Sudan Medical Service which has evolved from a military service, through the establishment of local hospitals and dispensaries, into a large civil organization educating its own native medical assistants and sanitary officers who, in turn, inculcate in the people those hygienic habits essential to the prevention of disease.

Cancer. The most notable event in relation to the public health services in England and Wales in 1938 was the announcement of the minister of health that the government proposed to place the duty on local authorities of preparing schemes for the early diagnosis and efficient treatment of cancer, and to make Treasury grants for the purpose. As the result of the activities since 1929 of the Radium Trust and Radium Commission, a number of hospitals, usually in virtue of their association with a medical school, have become centres for cancer treatment for the immediately surrounding regions Nevertheless, three-quarters of those contracting some form of cancer are said to fail to receive early and efficient treatment While the new proposals will place the onus on the larger local authorities of making such facilities available and known to the inhabitants of their districts, they will foster the development and improvement of the existing centres and encourage authorities to combine for the more effective use of the service which these centres can give

General Medical Service. The British Medical Association has revised and reissued its scheme for a general medical service for the nation, first published in 1930.[2] The scheme envisages complete medical provision for every member of the community of Great Britain, while preserving that freedom of choice of doctor which is considered to be incompatible with a salaried service. It involves extension to dependants of medical benefits of the kind at present available for insured persons only, and expansion of these benefits to include consultant, specialist, and laboratory services It entails close integration of medical practice with the clinical services now given by local health, education, and public assistance authorities, and the cessation of some of the operations of clinics which are regarded as falling properly within the sphere of general practice. Co-ordination, within regions, of the voluntary and municipal hospitals would be an essential preliminary to their proper association with domiciliary medicine, a condition which involves a readjustment of areas of local government for health purposes, or greater use of the present powers of combination possessed by local authorities. Coming on the heels of the Reports by P.E.P. (Political and Economic Planning) and the Voluntary Hospitals Commission in 1937, these proposals have been received with very keen interest.

Maternity Services. The arrangements required to be made in England and Wales under the Midwives Act, 1936, for the establishment by the local authority in each area of a service of whole-time salaried midwives are now virtually completed. By April, 1938, 7,500 women were so employed. As a contribution toward the improvement in midwifery, the Central Midwives Board have, by rule, doubled the period of training of midwives as from May, 1938. State registered nurses are required to undergo a year's training, other women two years. A modified course of six months is provided for State registered nurses desiring to qualify as health visitors, without intention to practise midwifery. The minister of health has also asked local authorities to take steps, in co-operation with the medical profession in their areas, for ensuring that the best local obstetric skill may be available for emergency aid required by midwives. For this purpose he suggests that lists should be prepared of local practitioners desiring to render such service, to be scrutinized and subject to approval, absolute or conditional, by a small advisory committee representing the general practitioners and obstetricians of the district.[3] A New Zealand committee has reported in favour of a maternity scheme resembling that of Scotland, but with greater hospital provision.[4] (R. M. F. P.)

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United States While the United States public health service is still actively engaged in the study of the causes of diseases, methods of spread, and means of control, it is also directing more attention to the fuller application of preventive knowledge already available This activity probably represents its most outstanding development during 1937 and 1938 Prior to 1936 only four states had established industrial hygiene units, whereas since that year, twenty states have established such units in their departments of health Prior to the Social Security Act (1935), only thirteen states had separate divisions of venereal diseases, on July 1, 1938, 26 had such separate divisions.

Some of the advances of the United States public health service during 1938 are represented by the passage of the Venereal Disease Control Act, authorizing the appropriation of $15 millions for the three years 1939–41, for activities directed towards the control of venereal diseases, and the appropriation of $750,000 for construction of the National Cancer Institute and $400,000 for conducting studies on cancer Investigations conducted by it in 1937 and 1938 have shown that probably one in six persons in the United States is infected with trichinosis; that rheumatic heart disease is exceeded as a cause of death only by tuberculosis, pneumonia, and syphilis; that Rocky Mountain spotted fever occurs in areas heretofore thought to be free from the disease; and that chronic industrial mercurialism is preventable with proper engineering and medical control.

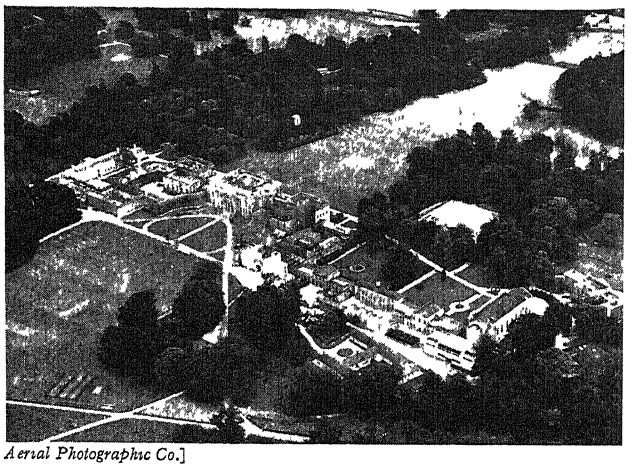
The work of the United States public health service is administered by the surgeon-general and eight assistant surgeons-general in charge of the eight administrative divisions, and on July 1, its personnel consisted of 572 commissioned officers and 7,472 technical and other employees.

PUBLIC-HOUSE GAMES. As one of the results of the movement towards raising the public-house from the status of a "boozing-ken" into a place where a reasonable man (and his wife) can obtain reasonable recreation, the last few years have seen quite a renaissance in those games which, some of them for centuries, have been played on licensed premises, and the brewers as well as the licensees themselves take great interest in their promotion. For example, the governing body of the game of darts (*q.v.*)—one of the chief revivals—is, with one exception (a dart-board manufacturer), composed entirely of publicans, and the challenge shields, etc., are provided mainly by brewery firms, while, as is only natural, the headquarters of the governing bodies of such of these games as have them are, almost invariably, on licensed premises.

Setting aside billiards, snooker, and the other billiard-table games with which we are not at present concerned, and thanks almost as much to clever propaganda and press publicity as to its undoubted native attraction, darts is far-and-away the most popular public-house game at present; but "shove-ha'-penny", especially in the north of England, makes a good second. This is played on a slate or wooden slab with metal discs, and consists in "shoving" these discs with the hand into spaces marked transversely on the slab; it has its "Control Association", which has adopted slate as the official "bed", this giving a more consistent speed than wood, as well as remaining true. Dominoes is very popular among the older men, and so is cribbage—though not so much in the large towns, in which, though there is no law forbidding card-games generally, licensees seem nervous of them; chess and draughts would seem to have very few patrons in the public-house, though in working-men's clubs both have their devotees. At a few places in London, and at many more in the country (where space is not at so high a premium), skittles and quoits are still played, and each has its Association, table-tennis (*q v.*), once popular in public-houses, would seem to have dropped out, probably for the same reason.

The legal position as regards games in public-houses is very simple, though the rules laid down by the various joint standing committees and licensing authorities tend to complicate them; a few games, among them ace of hearts, faro, roulette, baccarat, and chemin-de-fer, are unlawful in themselves, whether played for money or not, and so are any games, even "snakes-and-ladders", played with dice, backgammon alone excepted, other games are lawful, always provided that they are not played for money or money's worth—which includes drinks. A licensee who allows his billiard-table or dart-board to be used for games in which the loser "pays for drinks" renders himself liable to a fine of £10 for the first and £20 for each subsequent offence, similarly, if he gives prizes or allows prizes to be won as a result of working an automatic machine in which the skill of the worker is not the preponderating influence, and also if he allows on his premises a whist drive in which prizes paid for out of the players' entrance fees are awarded At the Royal Commission on Licensing (1929–30), it was strongly urged, on behalf of "the trade", that the law should be amended so as to permit playing legal games for drinks or similar trivial stakes; it was also strongly urged that the present system under which standing joint committees give instructions to the police that games, or certain games, will not be permitted should be discontinued; there are counties in which they will not allow cards, but will allow dominoes, and there are others in which dominoes cannot be played at all, though entirely lawful; at Huddersfield even darts has been suppressed. The playing of billiards (for which in the case of non-"fully licensed houses" a separate licence must be obtained) and of any game on the billiard-table is unlawful between 1 a.m. and 8 a.m., also on Sunday, Good Friday, Christmas Day, or on any public fast or Thanksgiving Day. This restriction applies even to the landlord and his family, lodgers, etc., and to Russian bagatelle and games of a like kind. (L. H. D.)

PUBLIC SCHOOLS. A logical definition of the term "public school" in Great Britain has always been difficult, but it is understood generally to connote membership of the Head Masters' Conference and inclusion in the *Public Schools Year-Book*. At the Winchester Conference, held in Dec. 1937, a series of resolutions was passed defining more closely the essentials expected from a school applying for membership, and thereby making more homogeneous the types of schools which may be called "public schools". These resolutions demanded a large measure of independence, and sufficient numbers of boys over thirteen years of age, of boys doing post-Certificate work, and of Old Boys at the universities, to give the school and its head master a position of value to the Conference. A further resolution allowed the committee to elect a limited number of schools, which, by their history and tradition or by the outstanding personality of the head master, deserved to be represented, even though they did not fulfil the conditions. In Oct. 1938, the number of members was 185, with 29 Overseas members. During the past year, the Conference has dealt with many matters, the most important being the question of the exchange of teachers with those of the Dominions, service abroad, school holidays, decline of population, and Air Raid Precautions.



Aerial Photographic Co.]

AN AERIAL VIEW OF STOWE SCHOOL, IN BUCKINGHAMSHIRE

Exchanges with the Dominions. A sub-committee has been set up to deal with exchanges, and Mr. F. B. Malim, late Master of Wellington College, set off in Oct. 1938 on a tour of the Dominions, taking with him records and personal notes of a number of masters willing to serve for a term of years in the Dominions, and expecting to return with a similar record of those wishing to come to England. By this means it is expected that closer relations between English and Dominions public schools may be attained.

Service Abroad. The British Council, in its endeavour to strengthen the influence of British culture abroad, has asked the public schools to facilitate opportunities for masters to serve abroad, by restoring their positions when they return This work is also being dealt with by the sub-committee set up for Dominions exchanges.

School Holidays. The decision to give holidays with pay has led to the problem of overcrowded holiday resorts, and one of the solutions has been a proposal to alter school holidays. This proposal in its turn, is bound up with the dates of examinations, and much time has been spent in trying to find a solution. The first suggestion of examinations in November and December was rejected by the universities, and a later suggestion of the first fortnight in June has been strenuously opposed by the schools and also by some of the university examining bodies. It seems probable that no change will be made, as under existing arrangements not all examining bodies examine at the same time and therefore there is some relief from congestion.

Decline in Population. From the statistics in the hands of the Population Investigation Committee, the secondary school population will begin to show a decline in 1940, and by 1950–55 this decline will affect secondary schools seriously. Already the Conference has begun to discuss this matter and to explore possible courses to meet the intensified competition likely to result.

Air Raid Precautions. The crisis in Sept. 1938 found the public schools rather better prepared than some other sections of the country. Plans for evacuation in dangerous areas had been made and were in some cases successfully carried out, but, in many areas schools were in ignorance of the plans made by local authorities. There still remain to be settled such questions as the allocation of members of the staff to their proper spheres of duty, custody of respirators and building of trench systems. In general, the crisis produced a great spirit of helpfulness between school and school, and this certainly solved the problem of those schools most dangerously affected. (L. W. T.)

Girls' Schools. It is not easy to define a public school for girls The title is sometimes given only to what are commonly known as independent schools, that is, schools not in receipt of public money, but not run for private profit. This limitation of use may be misleading Whereas public schools for boys have existed for centuries, usually heavily endowed, the importance of girls' education has been recognized for less than one century. Consequently few girls' schools are endowed, and many of the pioneer schools, for instance, the North London Collegiate School (almost the oldest) and the schools of the Girls' Public Day School Trust, have found it necessary to accept a grant from the Board of Education. Most of these "direct grant" schools, are equal in standing to independent schools

Building is always going on; and sanatoria of the most approved type have recently been erected by Westonbirt and Howell's School, Denbigh.

The Ladies' College, Cheltenham, has extended its domestic science house, and is providing additional courses in civics and general citizenship, first-aid, and home nursing. It is hoped to add to the latter a course in preparation for Part I of the Preliminary State Examination for Nurses (Anatomy, Physiology, and Hygiene). The possibility of taking this part of the examination before entry to hospital should give a real stimulus to the recruitment of nurses, so necessary to meet the increased demand.

Many schools offer excellent opportunities to girls specially interested in art, and there is great variety in the crafts taken. Howell's School, Denbigh, has special syllabuses in weaving and bookbinding, and these have been accepted for the School Certificate Examination of the Northern Universities in 1939. St. Paul's Girls' School has instituted a much appreciated course in interior decoration.

School activities are extremely varied. Roedean School reports the establishment of a sixth form model parliament, and prints a fortnightly news summary, mainly international. The Head Girl of the Royal School, Bath, on hearing of the Conference of the Association of Head Mistresses, produced the really novel suggestion of a Conference of Head Girls. One was held in December, and was attended by the Head Girls of nine boarding schools. It was reported to be a great success, and is likely to be repeated in this district next year.

The stress laid in the schools on social service may be exemplified by the following instances: at Queen Anne's School, Caversham, some of the sixth form go regularly once a week to help in the Reading Nursery School recently established on a new estate; and Liverpool College, Huyton, has undertaken many activities on behalf of a new housing estate in its neighbourhood. (E. R. G.)

U.S.A. The equivalent in the U.S.A. and Canada of the English public schools are included in what are known in those countries as "private schools", such privately endowed American schools as Exeter and Andover, for example, bearing some sort of relation to Eton and Harrow. The U.S. Office of Education listed 3,327 private high or secondary schools, 1,551 private commercial schools, and 1,159 private or non-tax-supported colleges for the year 1935–36. In the autumn of 1938 private school registrations were about the same as the previous year, which showed an increase of fifteen per cent over the registration of 1936. Private school programmes show increased attention to manual and motor activities, wider opportunities in the arts, and greater emphasis on the finding and developing of individual aptitudes—features available in but few of the tax-supported public schools.

PUBLIC STATUTES OF THE UNITED KINGDOM. In constitutional law, the Eire (Confirmation of Agreements) Act set a legislative seal upon the successful negotiations with Eire for the settlement of financial claims between that Dominion and England and for facilitating trade and commerce between the two countries. The Anglo-Turkish (Armaments Credit) Agreement Act gave effect to the financial agreement between Great Britain and the Turkish Republic. The Dominica Act separated Dominica from the Leeward Islands.

Two enactments had more or less connexion with the unsettled state of foreign politics. The spectre of aerial warfare was certainly one of the causes of the Fire Brigades Act. Its aim is to introduce co-ordination in fire extinction services between county boroughs and the neighbouring county districts. The shadow of war appears also in the Essential Commodities Reserves Act, which conferred upon the Board of Trade power to obtain information as to commodities vital to the needs of the community in the event of war and to build up reserves of such commodities.

In criminal law, the Infanticide Act repealed and improved upon the Act of 1922 by relaxing still further the law of murder in relation to women who, owing to mental instability following upon child-birth, cause the death of their children under the age of twelve months.

The Evidence Act created exceptions to the rule which excludes as hearsay evidence certain documents. The Act also dispensed with the necessity for calling an attesting witness to prove the document attested.

The year 1938 was fruitful in legislation affecting trade and industry. The main purpose of the Coal Act was to improve the condition of miners. It set up a Commission to ensure the working of the Act, and it provided for the acquisition of ownership in unworked mines, the reduction of the number of coal-mining undertakings, and the compulsory acquisition of land for the welfare of miners. The Bacon Industry Act created a new Bacon Development Board, a Pig Marketing Board, and a Bacon Marketing Board, to ensure the plentiful supply of bacon. Night baking was restricted by the Baking Industry (Hours of Work) Act, a measure much needed in the interests of the workers' health. The wages of lorry drivers and of other persons employed in mechanical transport of goods by road were made the subject of regulation by the Road Haulage Wages Act. The sea-fishing trade was helped by two statutes: the Herring Industry Act authorized further financial assistance to that industry, and the Sea Fish Industry Act seeks to organize in better fashion that branch of the trade which relates to "white fish", a term which excludes herring, salmon, and trout. One more effort was made by the Cinematograph Films Act to aid British films in their competition with American firms; and the Act also deals with the wages and conditions of employment of workers in the production of films. The Holidays with Pay Act empowers Trade Boards, Agricultural Wages Committees, and the Road Haulage Control Wages Board to direct that paid holidays shall be granted to the workers whose wages they regulate. The whole law relating to trade marks was consolidated by the Trade Marks Act. The Unemployment Insurance Act extended the powers of education authorities with respect to courses of instruction under the earlier Act of 1935, rendered certain specified employments insurable, and amended the law as to the insurance of discharged seamen, marines, soldiers, and airmen. By the Hire Purchase Act, parliament has put stringent regulations upon a contract which, so long as it was left to the mere agreement of the parties themselves, produced gross abuses owing to the rapacity and sharp dealing of the sellers of goods on the hire-purchase system to ignorant and unwary buyers; an unfortunate consequence of this was that it had sapped public confidence in reputable tradesmen who adopt this mode of business and who will welcome the Act as an effort to reform such practices. The Act does not apply to agreements in which the price of the article exceeds £50 in the case of motor vehicles or railway rolling-stock, £500 in the case of livestock, and £100 in any other case. The law relating to Food and Drugs was consolidated by an Act of that title, which repealed some score of enactments, beginning with one of Henry VIII's reign, and including rather oddly one relating to knackers' yards.

In social legislation, lessees of small houses (*i.e.* rateable at £100 or less) are protected by the Leasehold Property (Repairs) Act against oppressive claims by their landlords in respect of dilapidations during the currency of the lease. The Increase of Rent and Mortgage Restrictions Act is the thirteenth statute which deals with restrictions on landlords against increasing the rents of their tenants or ejecting them. It releases from rent restriction houses which on April 6, 1931 (in London) and April 1, 1931 (elsewhere) were of a rateable value of £35 in London or £20 elsewhere. On the other hand, houses which do not fall within these classes become "undecontrollable". The Acts are to expire on June 24, 1942. The Housing (Financial Provisions) Act makes important changes in the contributions made respectively by the Exchequer and by local authorities with regard to housing accommodation for the working classes, *i.e.* for slum clearance. The Inheritance (Family Provisions) Act makes a very remarkable innovation upon the freedom which English law allows to a testator to ignore the claims of his family. Such liberty—or licence—is quite unfamiliar to many other systems of law. By the Act, where a testator has not made reasonable provision in his will for a wife, a husband, an unmarried daughter, or a son who is an infant or physically or mentally incapable of maintaining himself, the court can make such provision out of the net estate. The work and play of children are supervised respectively by the Young Persons (Employment) Act, which limits their hours of employment between sixteen and eighteen years of age to 48 hours a week, and below sixteen years to 44 hours; and the Street Playground Act, which enables local highway authorities to turn particular roads into playgrounds for children and, for that purpose, to restrict the access thereto of vehicles. (P. H. W.)

PUBLISHING. Some 1,195 fewer books were published in Great Britain and Eire during 1938 than in 1937, the figures being 17,286 and 16,091 respectively. Although the international situation to some extent was responsible for the falling off (detailed figures show clearly the effect of the *Anschluss* in March and of the Czechoslovak crisis in September), the revival of the "sixpennies" has had a serious repercussion on the publication of reprints and new editions, the latter alone being responsible for over sixty per cent of the total of 1,195. For the time being, at all events, certain of the cheap pocket editions are entirely out of favour. Another effect of the "sixpennies" has been to encourage the book-buying public to expect a wholesale lowering of the prices of books. In spite of these adversities, the figures for 1938 show that British publishing maintains its vitality, and that changes are mostly in the revaluation of the need for certain types of books.

The following are the chief changes in the representation of the various classes of literature as compared with 1937. The main decreases are in Fiction (— 387), Biography (— 183), Juvenile (— 134), History (— 131), Medicine (— 86), Fine Arts (— 60), Science (— 57), and Education (— 45). Other smaller decreases have taken place in Poetry and Drama, Music, Religion, Geography, and Technology. Five classes show increases: Sociology (+ 54), Law (+ 45), Philology (+ 34), Business (+ 14), and Literature (+ 9). Philosophy, acting in accordance with the philosophic outlook on the world's alarms, remains constant at exactly the same total as in 1937.

The table below gives classified figures of British publishing in 1937 and 1938.

Classes of Literature (International Classification)	New Books			New Editions	Totals for 1938	Totals for 1937
	New Books	Translations	Pamphlets			
Philosophy	213	21	8	31	273	273
Religion	750	59	71	102	982	1,017
Sociology	773	24	262	86	1,145	1,091
Law	154	1	59	96	310	265
Education	206	2	53	18	279	324
Military and Naval	126	2	49	39	216	226
Philology	242	1	18	31	292	258
Science	513	10	66	112	701	758
Technology	483	6	97	169	755	783
Medicine, Public Health, etc.	327	7	58	126	518	604
Agriculture, Gardening	152	2	23	38	215	237
Domestic Arts	76	1	13	7	97	122
Business	107	—	20	31	158	144
Fine Arts	263	6	21	24	314	374
Music (Works about)	47	2	7	5	61	99
Games, Sports, etc	192	4	15	52	263	296
Literature	357	13	13	77	460	451
Poetry and Drama	396	30	108	90	624	664
Fiction	1,830	70	—	2,449	4,358	4,745
Juvenile	969	14	244	402	1,629	1,763
History	529	30	22	81	662	793
Description and Travel	579	22	15	143	759	765
Geography	56	—	1	7	64	94
Biography	542	61	19	131	753	936
General Works	203	—	—	—	203	204
Totals	10,094	388	1,262	4,347	16,091	17,286
	11,744					
Totals for 1937	12,209			5,077	17,286	17,286

To assist the book trade in France the French government voted a special credit of 15,000,000 francs in order that libraries in other countries might be presented with French books. A number of famous men were asked to prepare a list of the most important books published during the last ten years. A list of libraries was drawn up by French diplomats abroad, and the catalogue was sent to the librarians with an invitation to choose those books which they would like to have. Almost all the publishers have had a share of this huge order, and as it came at a particularly difficult time, it was enthusiastically welcomed.

In Germany, recent statistics show that the value of books produced annually (650,000,000 marks) takes precedence over men's clothes (647,000,000 marks) and women's clothes (608,000,000 marks). In 1935, the total of books published was 23,212, a long way below the pre-war figure of 35,000 Germany's best seller is Herr Hitler's *Mein Kampf*, and sales during 1938 were approximately 900,000 copies. During the year, from June 19 to 24, the Twelfth International Publisher's congress was held in Leipzig.

A novel development in the book trade in Czechoslovakia during 1938 was the great increase in direct selling by publishers. This policy led to quick sales of large numbers of books, and, in spite of protests by the booksellers, it is being continued and extended. Most publishing houses employ house-to-house canvassers, who secure anything up to 70 per cent of the orders, and facilities are given to the public to obtain books on the instalment system. (E. W. M.)

In the United States during 1938 there were published 9,464 new books and 1,603 new editions, making a total of 11,067 excluding pamphlets—an increase of 155 over the 1937 figures. Fiction headed the list of new books with a total of 1,217, and was followed by children's books with 895, religion with 790, history with 776, sociology with 758, poetry and drama with 698, and biography with 604. The highest sale for the year was attained by Margaret Halsey's *With Malice Toward Some*, with 373,000 copies.

PUERTO RICO, a United States insular dependency in the West Indies; capital, San Juan; governor, Gen. Blanton Winship. Area 3,435 sq. miles; population (official est. 1935) 1,723,534. In 1930, 25·7 per cent of the population was Negro. The chief cities (est. pop. 1935) are: San Juan, 137,215; Ponce, 60,867; Mayagüez, 44,907.

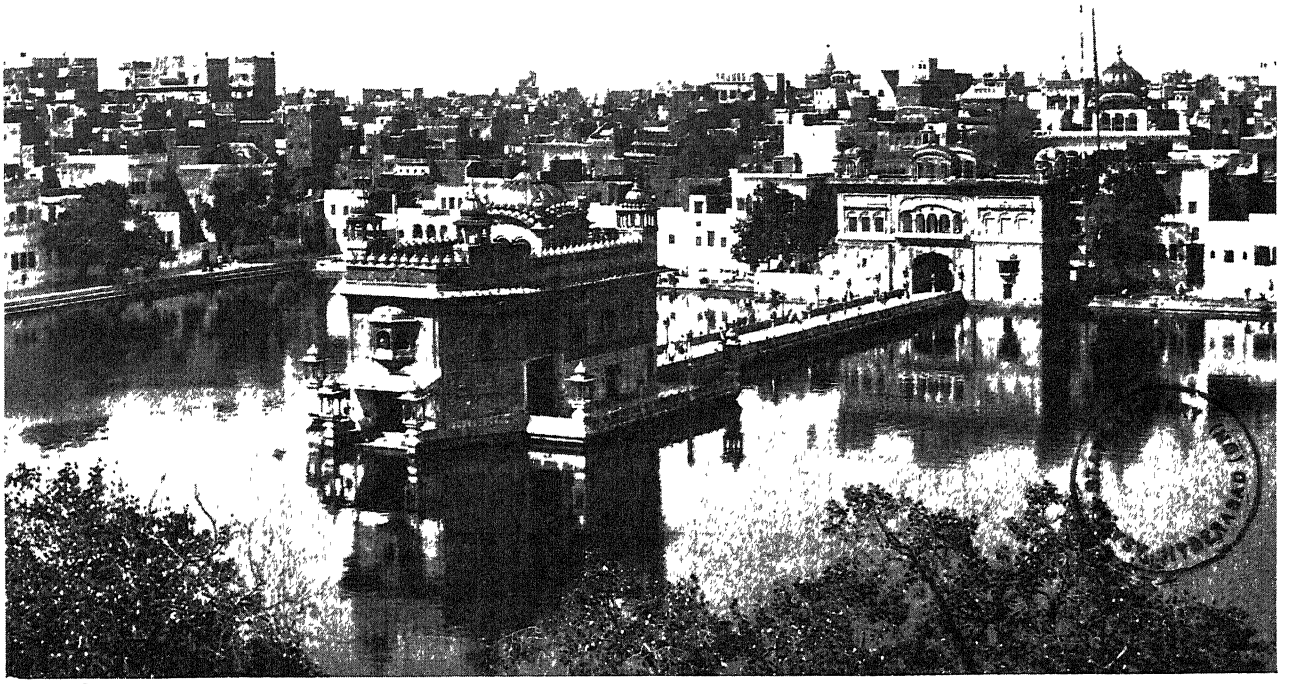
The first months of 1938 in Puerto Rico were marked by rather serious labour disturbances, as longshoremen's strikes caused a practical blockade of imports and exports throughout January. Attempts at arbitration were hampered by insistence that wage demands of organized clerks and checkers also be satisfied.

A terrorist campaign for Puerto Rican independence led by members of the Nationalist Party culminated, on July 25, in an attempt to assassinate Governor Blanton Winship as he was reviewing the guard in an Occupation Day ceremony celebrating the 40th anniversary of American occupation. Colonel Irizarry of the National Guard, who was with the governor, and one of the Nationalist leaders were killed.

Labour problems again loomed large in October, when enforcement of the Fair Labor Standards Act terminated employment for about 120,000 workers. Exemption of most of the 90,000 home needle-workers in Puerto Rico from provisions of the Act and enactment of a differential for that territory were sought by Governor Winship. The problem, however, was still unsettled at the close of 1938.

In December, on the occasion of revision of Cuba's reciprocal trade agreement with the United States, there was general protest throughout Puerto Rico. It was asserted that the unemployment caused by the Wages and Standards legislation would be further aggravated by the sugar concessions to Cuba, as lower Cuban wage levels would more than offset the slight tariff advantage enjoyed by Puerto Rico.

Work continued on the $7 millions Isla Grande airport, developed by the government at the site being considered for a United States Naval air base. On Dec. 30, plans were approved for a new dry dock in San Juan harbour, to cost $1,750,000. With the completion of dredging and other harbour improvements already under way, this was expected to make San Juan the most adequate harbour in the Caribbean.



P. Popper]

THE GOLDEN TEMPLE AT AMRITSAR, PUNJAB

Education. In 1938 Puerto Rico had 1,830 primary and secondary schools, with 280,945 enrolment (a thirteen per cent increase over 1937). The University of Puerto Rico is important as a cultural link between the United States and Hispanic America.

Finance. The monetary unit is the United States dollar. For 1937–38 receipts were $19,611,380, disbursements $20,136,876. The bonded indebtedness on July 1, 1938, was $27,400,000.

Trade and Communications. There are 306 miles of railways and a highway system of 1,176 miles, supplemented by local roads. The insular government owns 1,180 miles of telegraph and 1,969 miles of telephone lines.

For the first time in eight years, imports for the year 1937–38 exceeded exports. Exports were $82,077,178 (98 per cent to the United States), a 28 per cent decline. Imports decreased 5·5 per cent to $93,314,783 (91 per cent from United States). Sugar comprised 62 per cent of exports. Imports were largely foodstuffs and manufactured goods. (L. W. Be.)

PULP: *see* Paper and Pulp.

PUNJAB. This famous Indian province has had an uneventful year. Sir Herbert Emerson was succeeded as Governor by Sir Henry Craik, Bt., in September. The "Unionist" ministry, under Sir Sikandar Hyat Khan, has successfully withstood the hostility of Congress and the Sikhs. It has started a six-year plan of rural development, including the consolidation of holdings, the improvement of water supplies, seed, cattle, manuring and marketing, and the relief of agricultural debt. The districts of Hissar and Rohtak are suffering from grievous famine, the worst since 1900; and active relief measures are in progress. The capital, Lahore, is flanked by the cantonment of Mian Mir.

The Punjab States lost a distinguished chief by the death in March 1938 of the Maharaja Bhupendra Singh of Patiala (*q.v.*). He was known in the West as a famous cricketer and polo-player; in India he had taken a prominent place in the Chamber of Princes, having been its Chancellor for years. (Me.)

Area and Population:
Area 99,200 sq. miles.
Population 23,580,852.
Governor. Sir Henry Craik, Bt., K.C.S.I.
Language. Punjabi mainly.
Religions. Mohammedan (two-thirds), Hindu.
Production 1936:
Area under cotton . . . . 2,500,000 acres
Factories, 747; No. of workers employed (average), 63,962.
Finance:
Revenue (1937–38 estimate) . . Rs. 10,90,39,000
Expenditure ,, ,, . . Rs. 10,88,67,000
Education 1936. Recognized institutions: No. of schools (approx.), 12,000; scholars, 1,300,000.
Motor vehicles licensed (March 31, 1937): cars and taxis, 8,908; commercial vehicles, 8,578; motor-cycles, 1,690.

PURCHASING POWER OF MONEY. The term purchasing power of money means the amount of goods which money will buy. Obviously, at any given moment, money has a specific purchasing power for each kind of goods on the market. From day to day, each of these specific purchasing powers is likely to change, for the prices of goods commonly fluctuate.

In a broad way, the purchasing power of money tends to vary directly with its relative scarcity as compared with the supply of goods. Thus, when money is scarce and goods abundant, a unit of money will buy a relatively large amount of goods. Statistical analysis proves, however, that the purchasing power of money is correlated more closely with the physical volume of trade than with the supply of goods on hand. Thus, when the ratio of the number of units of money to the number of units of goods dealt in grows larger, the purchasing power of a unit of money falls. The reverse is also true.

Attempts are often made to measure changes in the *general* purchasing power of money. To do this accurately, it would be imperative to have on hand a record of all exchanges of money for goods occurring during the period under consideration. Obviously, no such record is obtain-

able. It is, however, feasible to estimate without a very large error the average changes occurring in the command of money over certain large groups of commodities. Statisticians have compiled index numbers of prices believed to be representative for such groups as the following: (1) commodities of all types sold at wholesale, (2) commodities dealt in largely in international trade, (3) articles consumed by the labouring classes; (4) articles consumed by farmers; and (5) corporate stocks sold on the exchanges.

The Federal Reserve Bank of New York compiles an index series weighing the price changes for various groups of commodities in proportion to the importance which each

The Relative Purchasing Power of Money at various turning points during the last forty years (Jan. 1937=100)

Year	Month	Index Numbers of Prices [a]				Purchasing Power of Money relative to Jan. 1937 [n]			
		All Commodities at Wholesale		Commodities purchased at Retail by the Labouring Class		All Commodities at Wholesale		Commodities purchased at Retail by the Labouring Class	
		United Kingdom	United States	United Kingdom	United States	United Kingdom	United States	United Kingdom	United States
1896	Annual figure	L 67 2 [b]	L 54·1 [e]	—	—	H 148 8	H 184·8	—	—
1897	Annual figure	68 5 [b]	54·2 [e]	—	—	146·0	184·5	—	—
1914	Annual figure	C 87·6 [b]	C 79·2 [e]	—	70·5 [l]	C 114·2	C 138·9	—	141·8
1915	Annual figure	101·5 [b]	80·8 [e]	123 0 [i]	70·2 [l]	98·5	123·8	81·3	142·5
1920	May	H 267·5 [c]	H 194·4 [e]	162·8 [j]	141·2 [l]	L 37·4	L 51·4	61·4	70·8
	June	265·0 [c]	193·6 [e]	165·5 [j]	H 141·7 [l]	37 7	51·7	60·4	L 70·6
	Nov.	235·7 [c]	155·1 [e]	H 182·8 [j]	133·1 [l]	42·4	64·5	L 54·7	75·1
1922	Jan.	134·7 [c]	L 106·3 [e]	122·4 [j]	113·4 [l]	74·2	H 94·1	81·7	88·2
	Mar.	131·5 [c]	107·9 [e]	123·1 [j]	111·3 [l]	76·0	92·7	81·2	89·8
	Sept.	C 126·8 [c]	115·5 [e]	113·8 [j]	L 111·3 [l]	C 78·9	86 6	87·9	H 89·8
1923	July	128·6 [c]	114·4 [e]	C 111·9 [j]	115·8 [l]	77·8	87·4	C 89·4	86·4
1929	July	112·8 [c]	C 112·2 [e]	99·6 [j]	115·4 [l]	88·7	C 89·1	100·4	86·7
	Oct.	C 111·8 [c]	110·6 [e]	103·3 [j]	116·4 [l]	C 89·4	90·4	96·8	85·9
	Dec.	108·9 [c]	96·6 [e]	C 108·6 [j]	C 115·4 [l]	91·8	103·5	C 92·1	C 86·7
1931	Sept.	L 81·5 [c]	82·8 [f]	84·7 [j]	99 1 [l]	H 122·7	120·8	118·1	100·9
	Nov.	H 83·9 [c]	81·7 [f]	86·1 [j]	96·9 [l]	L 114·3	122·4	116·1	103·2
1932	July	L 80·3 [c]	75·0 [g]	82·8 [j]	89·2 [l]	H 124·5	133·3	120·8	112·1
	Sept.	H 83·9 [c]	75·9 [g]	81·5 [j]	88·1 [l]	L 119·2	131·8	122·7	113·5
1933	Feb.	81·2 [c]	L 69·5 [g]	L 80·8 [j]	83·1 [l]	123·2	H 143·9	H 123·8	120·3
	Apr.	L 79·9 [c]	70·3 [g]	H 110·2 [j]	L 82·5 [l]	H 125·2	142·2	L 90·7	H 121·2
	June	88·5 [c]	75·5 [g]	L 90·1 [j]	84·2 [l]	113·0	132·5	H 111·0	118·8
	Dec.	89·5 [c]	82·3 [g]	H 94·7 [j]	89·1 [l]	111·7	121·5	L 105·6	112·2
1934	June	85·1 [c]	86·7 [g]	L 91·4 [j]	84·2 [l]	117·5	115·3	H 109·4	118·8
1937	Jan.	100·0 [d]	100·0 [h]	100·0 [k]	100·0 [m]	100·0	100·0	100·0	100·0
	July	108·7 [d]	H 102·2 [h]	102·6 [k]	102·3 [m]	92·0	L 97·8	97·5	97·8
	Oct.	107·8 [o]	99·4 [p]	104 6 [o]	H 103·0 [p]	92·8	100·6	95·6	L 97·1
	Dec.	104·8 [o]	95·1 [p]	H 106·0 [o]	102·0 [p]	95·4	105·2	L 94·4	98·1
1938	Apr.	100·0 [o]	91·6 [p]	102·0 [o]	99·9 [p]	100·0	109·2	98·1	100·1
	May	99·0 [o]	90·9 [p]	103·3 [o]	99·6 [p]	101·0	110·0	96·8	100·4

L = low point.
H = high point.
C = marked change in trend.

[a] All relatives here presented have been arrived at by splicing together price relatives for various dates and transferring the spliced indices to the base, January, 1937.

[b] *The Board of Trade Journal and Commercial Gazette*, Jan. 13, 1921, p. 34.

[c] *Statistical Abstract for the United Kingdom* (1921–34), Statistical Department, Board of Trade, London, 1936, p. 238.

[d] *Federal Reserve Bulletin*, Nov. 1937, p. 1171.

[e] *Wholesale Prices*, Bulletin Number 543, United States Bureau of Labor Statistics, Washington, 1931, Table 1, pp. 4–10.

[f] *Wholesale Prices*, Bulletin Number 572, United States Bureau of Labor Statistics, Washington, 1933, Table 1, p. 10.

[g] *Survey of Current Business*, 1936 Supplement, United States Bureau of Foreign and Domestic Commerce, Washington, 1936, p. 12.

[h] *Survey of Current Business*, Nov. 1937, p. 23.

[i] *Statistical Abstract for the United Kingdom* (1920–24), London, 1926, p. 235.

[j] *Statistical Abstract for the United Kingdom* (1921–34), London, 1936, p. 137.

[k] *Federal Reserve Bulletin*, Nov. 1937, p. 1172.

[l] Beney, Ada M., *The Cost of Living in the United States 1914–1936*, The National Industrial Conference Board, New York, 1936, Table 1, pp. 57–61.

[m] *Survey of Current Business*, Nov. 1937, p. 23.

[n] The relatives here presented are the reciprocals of the relatives recorded in the left-hand section of this table.

[o] *Federal Reserve Bulletin*, July 1938, p. 633.

[p] *Survey of Current Business*, Aug. 1938, p. 23.

is believed to represent in the total trade of the United States This index presumably comes the nearest of any published series to recording changes in the general purchasing power of money Experience indicates that it fluctuates in much the same manner as indices representing the prices of articles sold at retail to the labouring classes.

Reciprocals of the index numbers just mentioned furnish reasonably good criteria of the purchasing power of money as regards each of the respective groups of commodities covered

During the last half century, the purchasing power of money has fluctuated widely in most nations. In both England and the United States, the command of money over goods increased from the 1870's until about 1897. Discoveries of gold in the Klondike and South Africa then made money more abundant in gold standard countries. Since both the United Kingdom and the United States were comprised in this group, the purchasing power of money fell in both nations. This decline continued slowly until the beginning of the World War. Soon most European nations abandoned the gold standard and began issuing great quantities of paper money. As a result, the purchasing power of the paper money declined sharply. According to Gresham's law, which states that cheaper money drives out dearer money, European paper money drove gold to the United States, which was still on a gold standard. This advent of great quantities of new gold caused the purchasing power of money to decline greatly in the United States. When, in 1917, the United States entered the War, inflation by the Federal Reserve Banks caused the purchasing power of money to fall still more rapidly. The decline culminated in the spring of 1920. Immediately thereafter, the speculative demand for commodities collapsed, and the purchasing power of money increased sharply for something like a year, but thereafter declined somewhat. During the period 1922–29, the purchasing power of money in terms of commodities at wholesale remained fairly constant, but it fell in terms of land and corporate stocks. At the close of 1929, the stock market boom collapsed and the purchasing power of money increased sharply until 1932. Money's command over goods then began a decline. In both England and the United States this decline was greatly accentuated by abandonment of the gold standard and credit money inflation. As a result of increasing business activity and the inflation just mentioned, money's command over commodities at wholesale declined markedly in both England and the United States between 1933 and the middle of 1937. In the case of commodities sold at retail, purchasing power reached a low point in the latter part of 1937. After the dates just mentioned cessation of inflation in the United States and declining business activity in both England and the United States caused the command of money over raw materials and stocks of corporations to rise sharply. This movement continued until the late spring of 1938. After that date, a tendency in the reverse direction became manifest

The relative extents of the major movements in this command over commodities at wholesale and retail are shown for the United Kingdom and the United States in the table opposite, in which all data are compared to the base, Jan 1937, at which date the purchasing power is considered 100. (*See* also PRICES, STATISTICS OF) (W. I. K.)

PYRITE OR PYRITES. World production of pyrite in 1935 reached 8,340,000 metric tons, only slightly less than the 1929 high, after having dropped to a low of 5,700,000 metric tons in 1932. Spain was the leading producer, having furnished 51 per cent of the output in 1929, 37 per cent in 1932, and 27 per cent in 1935. In 1936 operation of the largest Spanish mines was seriously interrupted by the civil war when the region was occupied by the rebel forces. Among other producers, Japan has a rapidly increasing output that ranked second in 1934 and 1935, and has possibly stood in first place since then, though this cannot be confirmed until more information is at hand on conditions in Spain In the next rank of producers, with outputs of 500,000–1,000,000 tons, are Norway, Italy, the Soviet Union, and the United States; in the 100,000–500,000 ton group are Cyprus, Germany, Portugal, France, Greece, Canada, and Sweden, and a number of others have still smaller outputs. With no data available from Spain, Japan, and the Soviet Union since 1935, no estimate can be given of current world output.

The United States output of 594,000 metric tons in 1937, which was more than treble the 1932 low and 68 per cent greater than the pre-depression high, although a record figure, was still insufficient to meet the demand, and was supplemented by imports of 533,000 tons; in the past, imports have been almost entirely from Spain; 1936 showed a marked drop in Spanish imports, but this was more than recovered in 1937, when imports from Spain reached a new high record, 8 per cent greater than that of 1929, and comprising 92 per cent of the total imports, the remainder coming in about equal amounts from Canada and Portugal. Partial data for 1938 indicated a drop of about one-third in imports.

British production of pyrite is insignificant (4,600 long tons in 1937), and there is no direct production in Canada, but by-product concentrates recovered from copper ores amounted to 108,350 metric tons in 1937, a drop of 6 per cent from 1936.

Q

QUEBEC. "Quebec has nothing to learn from any government at Ottawa", declared Mr. Maurice Duplessis, the National Union premier at a banquet in January, denouncing what he called the movement to centralize administration in Canada. The phrase underlined Quebec's line-up with the neighbouring province of Ontario, and co-operation with Ontario was stressed in the speech from the throne three days later. Quebec's independence was shown in March, when Mr. Duplessis refused to send a representative to Ottawa to discuss the province's "Padlock Law" with Federal Law officers and the Civil Liberties Union, which had petitioned for its disallowance as violating fundamental principles of the Canadian Constitution (The law authorizes the attorney-general to order the closing of any house "which he is satisfied has been used to propagate communism or bolshevism"—words whose meaning is not defined.) Again in May Mr Emery Beaulieu, representing Quebec, told the Rowell Commission that Quebec refused to recognize the Federal government's right to appoint individuals to investigate Dominion-Provincial relations. He supported Mr. Mitchell Hepburn's stand of the previous month, that the western provinces were receiving more consideration than Quebec or Ontario. The Padlock Law came into the limelight again in November, when a man named Xavier Lessard, with an associate, was sensentenced to a heavy prison term for breaking into his own home, which had been padlocked. Both men were alleged to be communists.

During 1938 the Liquor Commission, by order to tavern-keepers, forbade the admission of women. Legal rulings laid down that marriages of Catholics that do not conform with Canon Law are null and void.

A programme of government-owned power development in Timiskaming county, to serve the adjacent minefields, and the Premier's summary dismissal from the Cabinet of M. Leduc, Minister of Highways, were other noteworthy events.

The provincial Liberal Party, at a convention in June, re-elected Mr. Godbout as its leader and adopted an electoral programme calculated to retrieve the debacle of 1936. This included the abolition of the nominated Legislative Council (the only one in Canada), votes for women in provincial elections, a special ministry to evolve a constructive policy for youth and a new labour code which would ensure workers representation on public boards dealing with industrial and social questions.

Twelve people lost their lives in heavy floods in the eastern part of the province in September.

Area and Population:
Area 594,534 sq miles.
Population, est. 1937, 3,135,000 (Indians 12,312).
Chief Towns (pop. 1931 census) Montreal (818,577); Quebec (130,594), Verdun (60,745); Three Rivers (35,450).

Premier: Hon Maurice Duplessis.

Production:
Field crops (1937) $81,629,000
Dairy produce (1937) $58,019,100
Fisheries (1936) $2,108,404
Minerals (1936) $49,736,919 (copper, 66,340,175 lb.; gold, 666,905 fine oz.; lead 2,047,689 lb.; silver, 724,339 fine oz; zinc, 6,896,123 lb; asbestos, 301,287 tons)
Minerals (total value, 1937) . $65,043,971
Water Power, Jan 1, 1938, developed . 3,999,686 h.p

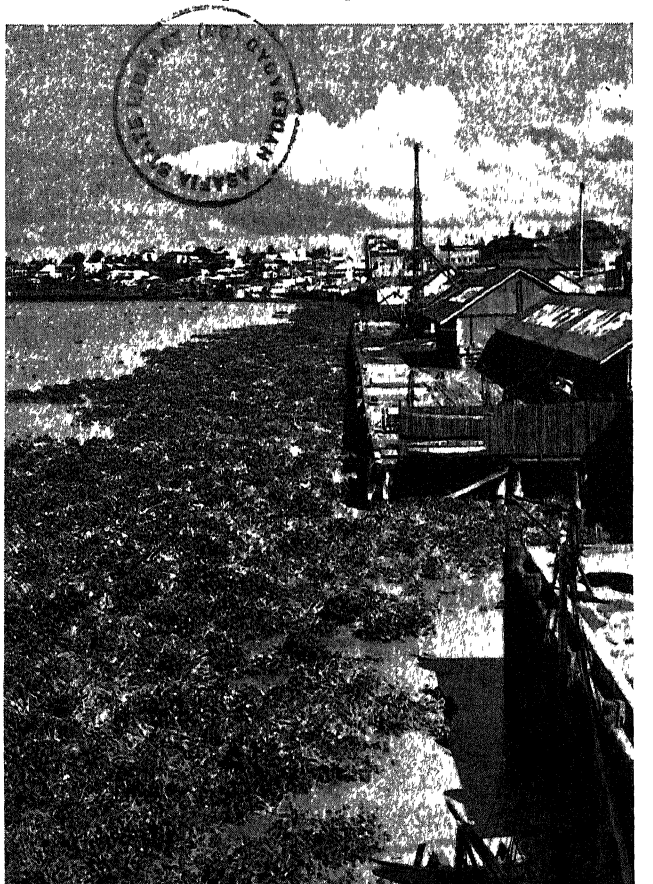
Industry Manufacturing 1936:
Establishments, 7,969; capital, $1,029,546,039, employees, 194,876; gross value of products, $863,687,389.

Communications and Transport:
Roads (June 30, 1936) total 34,834 miles (earth 17,468 m.)
Railways (Dec 31, 1936) . . . 4,777 miles
Motor vehicles registered (Dec. 31, 1936) cars 139,497; commercial 28,153; buses 505, cycles 2,489.

Finance:
Revenue, ordinary (1935–36) . . $40,497,031
Expenditure ,, ,, . . . $42,420,207
Debt, gross bonded (1936) . . . $164,747,607

Education, controlled schools (1935) . scholars 582,257

QUEENSLAND. In the course of 1938 the population of the state is believed to have passed the figure of one million for the first time, though no official estimate has yet been published. The building trade remained very active, the value of building operations approved by the Brisbane City Council totalled £983,730 in the first six months of 1938, an increase of £113,514 on the same period of 1937. Despite the lower prices for most primary products, the total value of exports from the state in the 1937–38 season was very little less in 1936–37, thanks to a larger volume of exports of sugar, beef, butter and lead.



A.N.T.A.]
QUEENSLAND. MASSES OF HYACINTH FLOATING DOWN THE BRISBANE RIVER DURING A FLOOD AND MAKING A LONG FLOWER-BED OF THE GARDENS REACH



ANTA]

SUGAR-CANE FIELD IN NORTH QUEENSLAND

More people were employed than ever before. The budget for 1937–38 produced a deficit, but this was smaller than had been recorded since 1928–29, and showed an improvement of more than £100,000 on the estimates. At a general election held in April 1938, the Labour party, under Mr Forgan Smith, which had held office since 1932, was again returned to power. The results were as follows (figures for the previous parliament in brackets): Labour, 44 (46), Country party, 13 (13); United Australia party, 4 (3); Protestant Labour, 1 (0). The last-named party appeared for the first time at this election, which was notable for the intrusion of sectarian strife. The legislation considered by parliament in the 1938 session included a State Development and Public Works Organization Act, designed to provide an orderly plan for the development of the state, and to increase employment and efficiency by co-ordinating all economic activities. Other measures introduced dealt with rural finance and the co-ordination of transport. Progress was made in 1938 with important public works, notably the Stanley River dam, Macleay harbour, and Story Bridge The Governor, Sir Leslie Wilson, was reappointed for a further term of five years. (H. V. H)

Area and Population:

Area 670,500 sq miles
Population (est. March 31, 1938) 996,212

Governor. Sir Leslie Orme Wilson, G C S I., D S O.

Production 1936–37:

Sugar, raw	744,676 tons
Maize	3,149,000 bushels
Wheat	2,016,000 ,,
Wool (1936)	153,766,000 lb.
Butter	84,401,000 ,,
Gold (1937)	127,281 oz.
Silver (,,)	3,264,994 ,,
Coal (,,)	1,120,179 tons

Industry, manufacturing (1936–37):

Factories, 2,816; Employees (average), 47,507; Production, net, £16,500,263.

Communications 1937:

Roads	34,011 miles
Railways, Government	6,567 ,,

Finance:

Revenue 1937–38 £17,339,731; 1938–39 est. £17,916,785.
Expenditure 1937–38 £17,568,223; 1938–39 est. £18,132,559.

Education 1936. Schools, 1,956; Scholars, 201,514.

Miscellaneous:

Motor vehicles licensed (June 30, 1937) 68,857 cars and taxis; 346 buses; 34,522 trucks; 8,040 motor-cycles.
Wireless receiving-set licences (June 30, 1937) 101,324.

QUINTERO, SERAFÍN ALVAREZ, Spanish dramatist, was born on March 26, 1871, at Utrera, near Seville, and died in Madrid on April 12, 1938 He wrote almost exclusively in collaboration with his younger brother, Joaquin, and the two produced many of the best and most successful contemporary Spanish plays. Productions were seen in England of *A Hundred Years ago*, 1928; *Doña Clarines*, 1932 and 1934; *The Women Have Their Way*, 1933; *The Lady from Alfaqueque*, 1928 and 1933; and *Peace and Quiet*, 1935.

R

RACKETS. An attempt was made during 1938 to enhance the popularity of rackets as a players' game by the introduction of a cheaper, machine-made instead of hand-sewn, ball, the expense of the ball—as many as 100 of which are frequently used in long games—having hitherto militated against it.

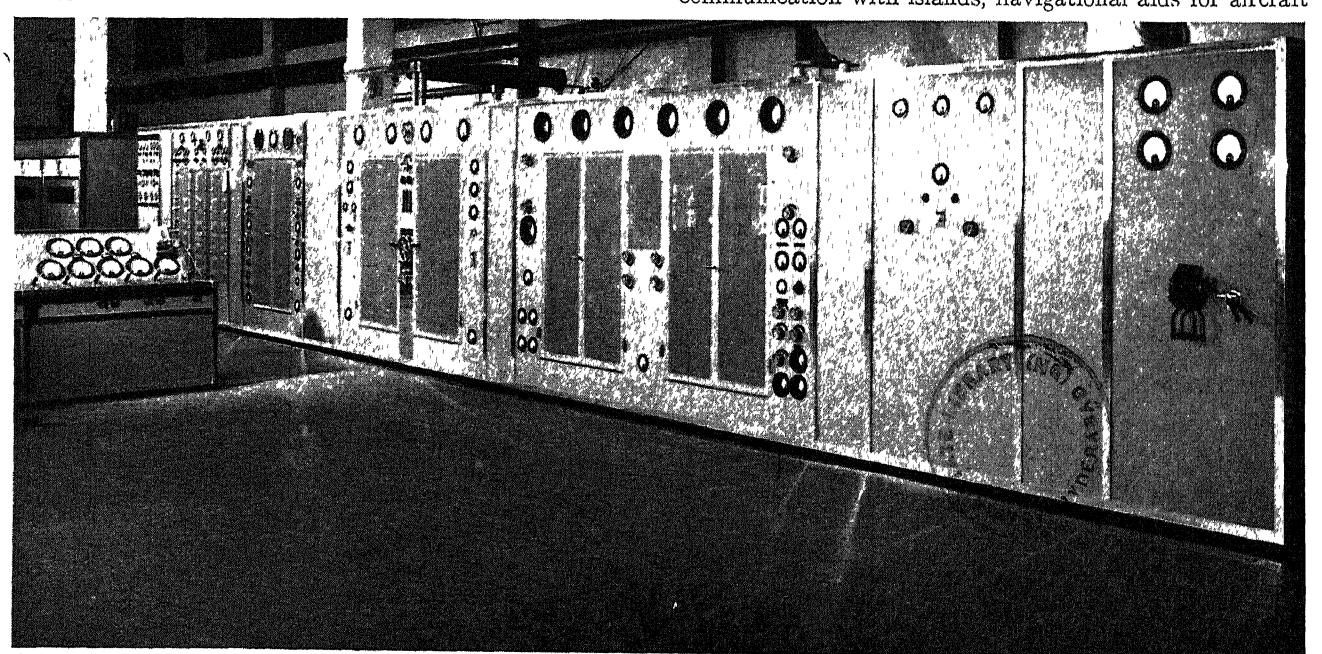
The world champion, D. S. Milford, again (for the fifth time and the fourth in succession) won the amateur singles, beating I Akers-Douglas, the holder of 1932, '33, and '34, in the final, and with P. M. Whitehouse, he won the doubles. The professional championship again went to the Eton coach, A. G. Cooper, who was backmarker at owe 7. Oxford won the inter-varsity event, Cambridge losing every match; in the Public Schools championship Rugby (A Kershaw and J. D. L. Repard) won for the eighth time, beating the holders, Malvern, in the final, and Rugby Old Boys retained the Noel Bruce Cup, won by them in the previous season. The Army championship went for the sixth time, and fifth in succession, to R. H Anstruther-Gough-Calthorpe, of The Royal Scots Greys.

RADIO: SCIENTIFIC DEVELOPMENTS. The most outstanding progress during 1938 on radio transmission has been concerned with the more extended use of what are usually referred to by radio engineers as "ultra short waves". This refers to wavelengths below ten metres Until about three or four years ago it was considered that the possible use of such wavelengths would, in general, be confined to point-to-point communication, where a visual or nearly visual path existed between the two points. It is now known, however, that communication between two points where no visual path exists can be effected using wavelengths down to about five metres and possibly below. In general, ultra short waves are used for direct-ray communication, as distinct from reflected-ray communication, up to distances of the order of about fifty miles.

The precise process by which such wavelengths are propagated beyond the horizon still remains a somewhat controversial matter, and this type of propagation should not be confused with that associated with transmission over much greater distances normally on somewhat longer waves. For example, it is now known that a wavelength of, say, seven metres, can be received under certain conditions at distances of, say, 3,000 to 4,000 miles, but this does not introduce any new feature, since transmission in this case depends purely on reflection, and is similar to the well-known phenomenon of long-distance transmission on ordinary "short waves" of, say, thirteen metres upwards. Transmission of this kind has been fairly well understood for some years, and depends on reflection from the ionosphere (ionized layers of gas existing at heights between 100 and 300 kilometres above the earth). In the case of "ultra short waves", however, suitable conditions of ionization only exist for very limited periods.

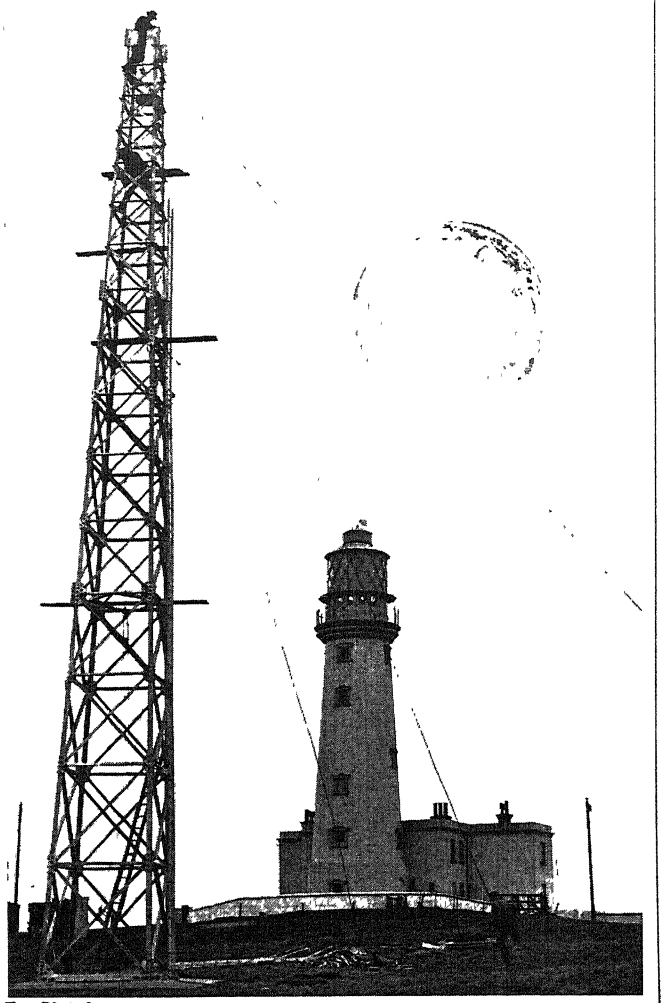
From the point of view of the general public, the most interesting application of "ultra short wave" transmission is in connexion with television, and most of the existing television services are conducted on wavelengths of the order of six to seven metres It is, in fact, essential to use a wavelength at least as short as this, since only by this means is it possible to obtain a sufficiently broad communication channel to accommodate the very wide frequency band necessary to convey to a satisfactory degree the information contained in a picture of a moving object. The width of radio channel necessary for television on 400 lines, or thereabouts, is approximately five megacycles per second, but this does not include the accompanying sound channel.

"Ultra short" wavelengths are now in great demand for other purposes, the most outstanding of which are point-to-point communication for the bridging of rivers and communication with islands, navigational aids for aircraft



British Broadcasting Corporation]

A TYPICAL SHORT-WAVE BROADCASTING TRANSMITTER



Fox Photos]
THE RADIO BEAM STATION, TO WIRELESS BEARINGS TO SHIPS IN THE VICINITY, BEING ERECTED NEAR FLAMBOROUGH HEAD LIGHT-HOUSE, APRIL 4, 1938

and ships, and communication with moving vehicles used for police and kindred purposes. Such waves are also very widely used for various military purposes concerning which information is not available.

There is little to report concerning communication on wavelengths above ten metres, and although active scientific study of the behaviour of the ionosphere continues in many countries, there is considerable controversy concerning most of the latest theories advanced to account for certain aspects of the phenomenon of transmission over very great distances. A similar state of affairs exists in connexion with the more recently discovered phenomenon of the intermodulation of waves in the ionosphere, sometimes referred to as the " Luxemburg effect ".

Some progress has been made in the investigation of possible means of determining by wireless the position of " short-wave " transmitters, that is, those working between, say, ten and 100 metres. Since transmission over any considerable distance from such stations depends entirely on reflection from the ionosphere, it was for many years considered impossible to apply ordinary direction-finding methods, owing to the frequent variations in the direction from which the waves arrived at the receiving point. Considerable progress has, however, been made recently in devising apparatus which, in favourable circumstances, gives a useful but limited measure of accuracy.

A new and important method has recently been worked out in America for improving the long-distance reception of " short waves " used for commercial telephone channels. This method has been called the " MUSA " system, which stands for multiple unit steerable antennæ One of the greatest difficulties in receiving telephony transmitted on " short waves " over long distances arises from the fact that transmission sometimes takes place over more than one path simultaneously This results in the received signal being of a composite nature, and the various components are frequently out of phase with each other, giving rise to severe distortion of speech. The object of this new system is to make it possible to select the transmission from one path only, at the same time ensuring that the reception shall be highly directional in the horizontal plane. The system is only applicable to large fixed receiving stations, since the necessary aerial system occupies a very large tract of land

In the field of broadcasting no very far-reaching innovations have been introduced during the past year, but progress has been made in improving methods introduced during the past several years. For example, for some years past it has been possible—with certain limitations as to the area effectively served—to operate two or more stations on a single wavelength channel, provided they transmit the same programme. Agreement will now be found in most countries as to the broad lines on which this can best be carried out, namely by high-precision temperature-controlled crystal drives. By this means two stations can be caused to work on the same wavelength channel with a degree of constancy which gives about one beat in half a minute between their carrier-wave frequencies.

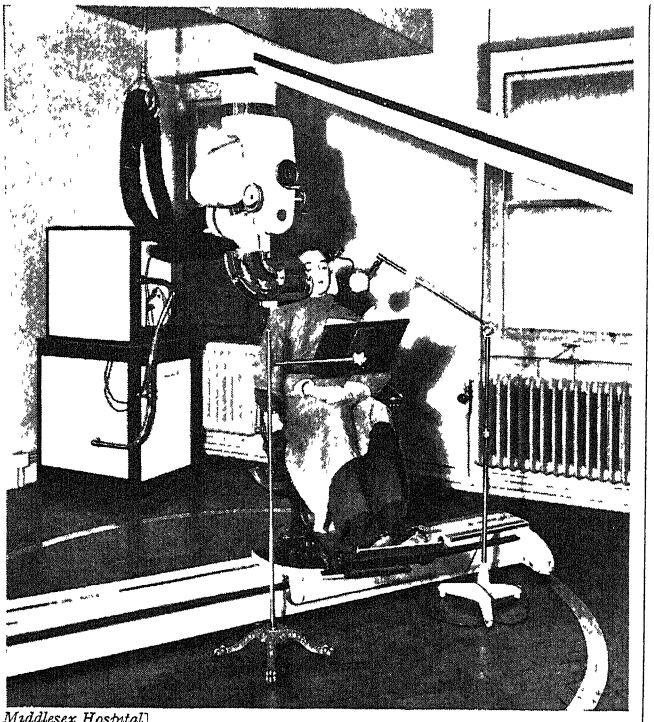
Transmitters for broadcasting have been improved, mainly in connexion with economizing the power absorbed for a given power output. There are several methods by which this may be effected, and it is now usual for every new transmitter to incorporate one of them.

With regard to " short-wave " long-distance broadcasting, the past year has seen an expansion of the services which have been in operation for some years from practically every large country, while at the same time several of the smaller countries have introduced services of this type. This has naturally caused a congestion of the wavebands available for this purpose.

One of the most important events in the radio world during the past year was the International Telecommunications Conference at Cairo. The last conference of this kind was held at Madrid in 1932. Among other functions it has to allocate wavebands to the different types of radio services, and it is important to record that at Cairo provision was made for television for the first time. (N. As.)

RADIOLOGY. The effects of the radiations of short wave-length constitute one of the main growing-points of present-day science. Not only do they form an essential part of medical diagnosis and treatment, but they are used as instruments of research in many different fields: in physics for the study of the structure of matter and the transmutation of elements, in biology for the study of cell-processes and genetic mutations, in physiology for the study of the functions of different organs, and in pathology for the elucidation of disease processes. Thus it is that the study and use of these radiations brings medicine into the very closest contact with the basic sciences.

Physiology. Radiological investigations are indeed creating, as Barclay expresses it, a " roentgen revolution "



Middlesex Hospital]

TELERADIUM UNIT

in physiology. The text-book descriptions of swallowing, digestion, respiration, and circulation, for example, are being rewritten in the light of the new knowledge brought by X-ray researches, while a proper understanding of the normal is, of course, essential for the diagnosis of the pathological. Thus, by using radio-opaque dusts, it has been shown that dry dust is not inhaled beyond the small bronchioles, and that it is very rapidly excreted by the action of the cilia. Liquids, however, and dusts suspended in liquids, penetrate right into the air-sacs, and are only excreted very slowly, so that pulmonary fibrosis results. These observations have important bearings upon the prevention of chronic lung diseases due to dust, such as silicosis, and suggest also that even very high concentrations of dry dust are easily dealt with by the healthy lung. For the excretion of liquids, however, the reserve force of the bronchial musculature is brought into action, and peristaltic waves of contraction of the bronchial muscle have been demonstrated by X-ray cinematography during the excretion of lipiodol. This work emphasizes an essential feature of asthma, that the attempt to expel collections of mucus causes a spasm of the bronchial muscles, so preventing the expiration of the air in the depths of the lungs.

Pathology. The use of X-rays is not confined to the better diagnosis of known diseases, but new disease processes are discovered by its means, so enabling rational treatment to be applied. Thus many chronic inflammatory conditions of the lungs were called, and treated as, tuberculosis; silicosis and anthracosis have now been separated out, and pulmonary fibrosis, due to fluorine poisoning (occurring in cryolite workers), is of particular interest, as the changes appear to be reversible when the occupation is changed. (Fluorine poisoning produces also mottling of the teeth, and is an example of how X-ray examination can reconstruct the past history of a patient; bismuth lines in the skeleton, healed gastric ulcer, calcareous glands, are other examples.) In farm-workers in a wet harvest, cases previously labelled " T.B." have been shown to be due to micro-fungi inhaled with the hay-dust, the exhibition of iodides results in complete cure when the disease is detected in its early stages by X-ray examination.

As a second example, the conglomeration of diseases labelled as chronic rheumatism is being steadily depleted by the radiological separation of definite entities; thus many cases of sciatica are due to a herniation of an intervertebral disc backwards into the spinal canal, so pressing on the lower end of the spinal cord and nerve-roots. For the accurate visualization of the region, air or lipiodol is injected into the spinal theca. The use of such contrast media has made every organ of the body susceptible to X-ray examination; the blood-vessels, the brain, the air-passages, the liver and gall-bladder, the kidneys, the uterine tubes, are all routinely examined by these means.

An important advance in X-ray diagnosis is afforded by the " tomograph ", which enables the body to be radiographed in " sections ". By the linked movement of the X-ray tube and film in opposite directions during an exposure, only one pre-determined plane of the patient is in focus throughout, and structures above and below this plane are " blurred out ". Thus a clear picture of structures deep in the body is obtained, which would otherwise have been completely obscured by the denser shadows of other structures superficial or deep to them. Tomography is of especial value in the detection of cavities in the lungs, of tumours in the brain, nasal sinuses and larynx, and of diseases of the vertebræ, but the exploration of its possibilities is indeed only beginning.

Kymography is a device which enables the movements of an organ to be recorded on the X-ray film, and has been of most use in the diagnosis of heart disease; thus an infarct of the heart muscle can be detected by its lack of contraction, or an aneurysm of the aorta by its expansile pulsation. X-ray cinematography is being increasingly used in research, but for economic reasons the day when it will replace kymography in routine examinations is probably far distant.

Radiotherapy. An important advance during the year is the decision of the British government to make available modern methods of diagnosis and treatment to all sufferers from cancer. In spite of the immense voluntary efforts of the past decade, only one-fourth of those to whom radiotherapy could offer relief or cure have been treated, so that government help was not only essential, but will also enable the voluntary organizations to intensify their work on the study of the causes of cancer, and on the development of improved methods of treatment. The study of the biological effects of neutrons is especially urgent; Lawrence's cyclotron is an apparatus which makes available beams of neutrons of intensity comparable with therapeutic beams of X- or gamma-rays, and the work already done in America suggests that they may have certain advantages in the treatment of cancer. The two cyclotrons recently built in Great Britain (at Cambridge and Liverpool) are primarily intended for physical research, so that, although supplies of artificially radioactive elements might be available from them, it is greatly to be hoped that the scheme for providing a cyclotron in London for biological research will soon be realized. The fortieth anniversary of Madame Curie's discovery was celebrated in Paris in November by a special congress of the International League against Cancer; the harvest in her lifetime was great, but the year 1938 has certainly seen no slackening in the pace. (R. PH.)

RADIUM. When the world's supply of radium was obtained from the comparatively lean ores of Czechoslo-

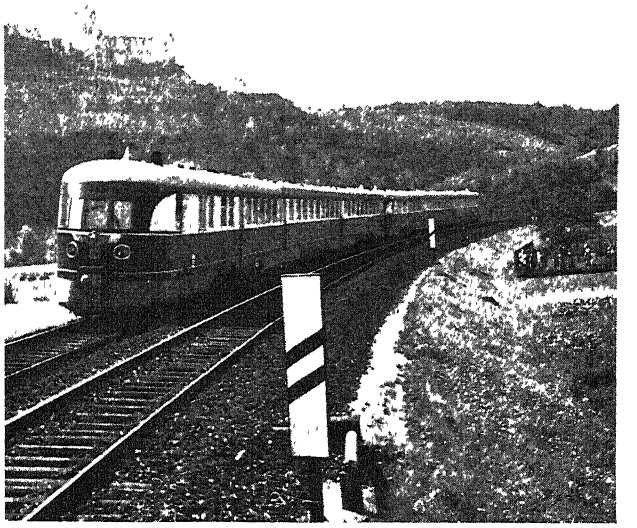
vakia, the United States, Australia, and Portugal, the price of the product was £20,000 or more per gramme, the discovery of much richer ores in the Belgian Congo brought the price down to £14,000, and with the collapse of world buying power in 1929 it was reduced to £10,000; recently new deposits of unparalleled richness have been discovered in Canada, and since the construction of a refinery for their treatment the official quotation has been cut to £8,000, but it is reported that purchases could be made at £5,000, or even as low as £4,000 in quantity. Production of refined radium salts began in Canada in 1933, with 3·0 grammes of radium content, but later additions to the refinery have greatly expanded the operations. In 1937, the milling of 23,838 short tons of ore yielded 475 tons of pitchblende concentrates, from 290 tons of which 23·868 grammes of radium was recovered. The entire output is shipped to England for measuring and packing into treatment needles, after which much of it is returned to Canada for sale. It has recently been reported that Congo and Canadian producers have agreed on a division of the market on a 60.40 basis. Although the radium-bearing ores of Colorado and Utah have been mined on an increasing scale during the past two or three years, this is primarily for their vanadium content, and little radium is recovered. The United States is the largest consumer of radium, and imports have increased heavily; during the first ten months of 1938 they reached the unprecedented total of 36·18 grammes, an amount in excess of the entire world output in 1927.

(*See* also CHEMISTRY, APPLIED, VANADIUM.)

RAILWAYS. It is recognized that one of the best indices to the internal trade of every country and the international trade of many is railway revenue. Industrial production as thus measured slackened perceptibly early in 1938: notably was this so in Great Britain, where for the first eleven months of the year railway receipts were four per cent, or about £7 millions, lower than in 1937, merchandise and coal traffic being almost entirely responsible, passenger traffic having held up well. The Southern Railway, owing to the predominance of its passenger traffic, therefore suffered less seriously than other lines. With costs higher than the previous year, the financial situation of the British railways was serious, and led to a request to the Minister of Transport for relief from regulation of charging powers, a practice dating from the birth of railways.

Railways throughout the world, almost without exception, have suffered from reduced trade activity, especially in France and the United States, and in Canada and Argentina owing to crop failures. With reduced traffic offering, road competition became more acute, and almost all countries search for a policy by which these two forms of transport will so dovetail into each other as to function with the minimum of competitive waste. No country has yet achieved an adequate solution, but each realizes the essential value of an efficient and reliable railway system. In the case of company-owned railways, as in Britain, the United States, Argentina, and the Canadian Pacific, the shareholder must bear the brunt of the present difficult situation, but elsewhere it is the State and ultimately the taxpayer who either fails to receive interest on the railway capital or at worst has to make good the losses on working.

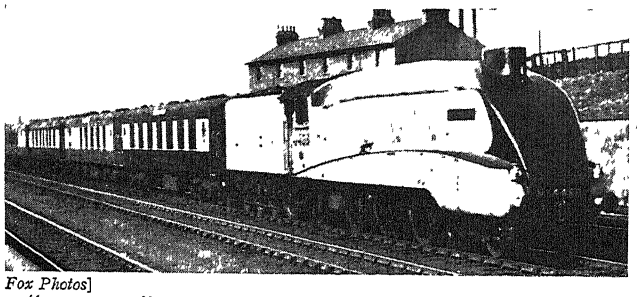
Great Britain. New railway construction is rare in Great Britain, but the Southern Railway opened the first section to Tolworth of its new electric suburban line from Motspur Park to Leatherhead, the stations being of notable design, mainly of reinforced concrete. On the other hand, the passenger services on one or two small branch lines were replaced by buses. New sections to be electrified were the South Shields suburban line of the London and North Eastern Railway and the Wirral section of the London, Midland and Scottish Railway, giving a through electrified service by the Mersey Tunnel from Liverpool to West Kirby; the multiple unit three-car sets are remarkable, as they only weigh 77 tons, and provide 181 seats. The S R. in July commenced its electrified main-line services from London, via Horsham, to Portsmouth and Bognor; 75 route miles were affected, bringing the total Southern electrified route mileage to 615, or 1,568 track miles. A feature of the new vestibuled trains were the buffet cars of unique design.



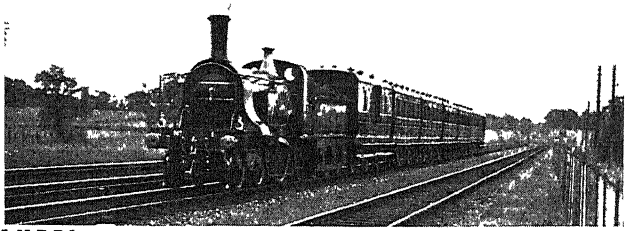
German Railways Information Bureau]
THE DIESEL-ENGINED GERMAN EXPRESS, THE "FLYING FRANKFURTER"

The S.R. did not, however, neglect its steam expresses; new coaches of extreme comfort were placed in service on the Bournemouth and Dover (Golden Arrow) routes. The same railway reconstructed many stations, notably Richmond and Surbiton, while the keenness of the staff was increased by the inauguration of a sales league competition between the stations: for the first time special excursions were run for sketchers and bicyclists. It may be noted that in 1937 record traffics were handled at the Southern Railway's Southampton Docks, the centenary of which took place in 1938; over 19,500,000 tons of shipping entered, and 622,000 passengers embarked or disembarked, being 47 per cent of the passenger movement between Great Britain and countries outside Europe. Incidentally, 4,500,000 passengers used the Southern's cross-Channel steamers in 1937, breaking all records.

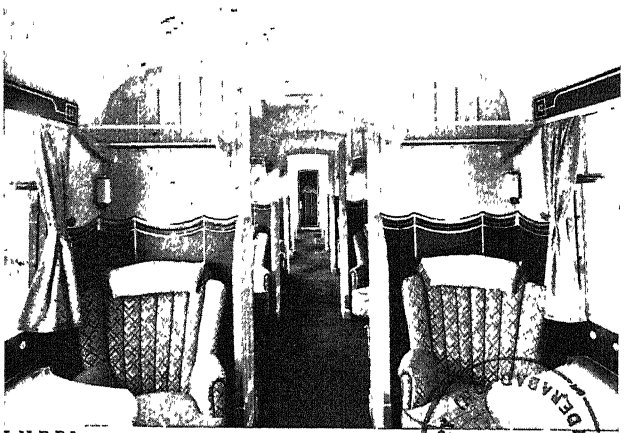
The Great Western Railway pressed forward its programme of equipping all its main lines with automatic train control, 2,852 track miles and 3,250 locomotives being so fitted at the end of 1938. This system, originated in 1906, now gives the engine driver an audible warning in the cab of the position of each "caution" signal. If the "distant" signal is "off," a bell rings; if in the "on" position a siren blows and the brakes are automatically applied



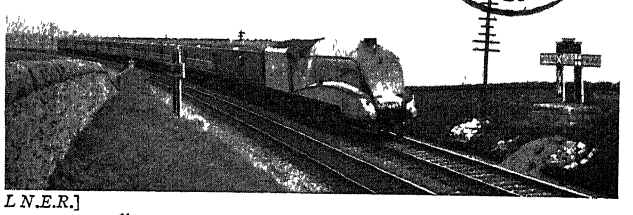
Fox Photos]
"MALLARD," L.N.E.R. ENGINE WHICH REACHED 125 M.P.H.



L.N.E.R.] THE "FLYING SCOTSMAN" OF 1888



L.N.E.R.]
INTERIOR OF LONDON–HARWICH "HOOK CONTINENTAL"



L.N.E.R.]
THE "FLYING SCOTSMAN" CROSSING THE BORDER



L.N.E.R.]
TYPICAL HIGH-SPEED FREIGHT TRAIN DRAWING CONTAINERS

throughout the train. The cost amounts to about £100 per track mile, including the locomotives. The L.M.S. has recently been experimenting with another system of automatic train control on its Tilbury section with such success that this latter system will be fitted on the Edinburgh–Glasgow line of the L.N.E.R. The L.M.S. in 1938 celebrated the centenary of the first travelling post office between London and Birmingham. A feature of technical interest is the rapidly increasing use of welding in rolling-stock construction; the L.M.S. has carried this practice very far in some new ten-coach excursion trains, at the same time using the articulated form of bogie. This design effected a saving in weight of 55 tons per train, and reduced the weight per passenger seat to 9¼ cwt., or 245 tons per train. This railway inaugurated a three-car diesel train weighing only 76 tons, and giving 162 seats, between Cambridge and Oxford; on the freight traffic side it has given detailed study to the problem of refrigerated transport for perishables, either by means of dry ice (solid CO_2) or the more normal ice method. Thus, frozen fish is carried satisfactorily from Aberdeen to Southampton, kippers from Kyle to London, or the temperature of soft fruit reduced by 20° F in transit. The time of the "Royal Scot" express between London and Glasgow was reduced to seven hours, as was that of the "Flying Scotsman" of the L.N.E.R., for which entirely new luxury trains were provided between London and Edinburgh.

Jointly with the L.N.E.R., the L.M.S. undertook the reconstruction of Leeds New and Wellington stations, the new combined station being called Leeds City, which covers nearly twenty acres. Its signalling is of the latest electric type. Even more remarkable is the new L.N.E.R. all-electric cabin at Hull (Paragon), in which some 230 different routes can be set up on one panel only ten feet long and two feet wide; it is thought to be the world's largest route relay interlocking scheme, and replaces several cabins totalling over 350 levers. Another major signalling reconstruction was at Edinburgh (Waverley East). Colour light automatic signalling was installed by this railway between Shenfield and Chelmsford and Shenfield and Southend, thus effecting major economies and also speeding up traffic movements. The L.N.E.R. extended its traffic control system at Sunderland, following the reconstruction of its control offices at York and Newcastle-on-Tyne. A new luxury train was built for the L.N.E.R.'s Hook of Holland boat-train service from London, and special mention should be made of the speed record of 125 m.p.h. put up by the L.N.E.R. 4-6-2 Pacific type locomotive "Mallard" on a test run, July 3, 1938, with the "Coronation" train set and a dynamometer car.

It is impossible to compare diesel and steam operation costs, the former being very much more expensive to construct for similar power and seating capacity, but it may be noted that an average British train burns 50½ lb. of coal per mile, costing 4¾*d*. Under British conditions requiring a train of at least 200 seats, high-speed operation is considered cheaper by steam. The L.M.S. and L.N.E.R. are constructing jointly a locomotive testing plant at Rugby, from which valuable results are expected. Amongst the new classes of locomotives placed in service in 1938 was the "Manor" class (4-6-0) by the G.W.R. The L.M.S. School of Transport at Derby was opened in July. The container system of working continues to meet with success on the British railways, about 14,000 being now in service. Railway renewal work is a routine matter, but few realize that each year over 4,000,000 new sleepers, 208,000 tons of

steel rails, and 1,800,000 cubic yards of ballast are required to keep up and improve the permanent way.

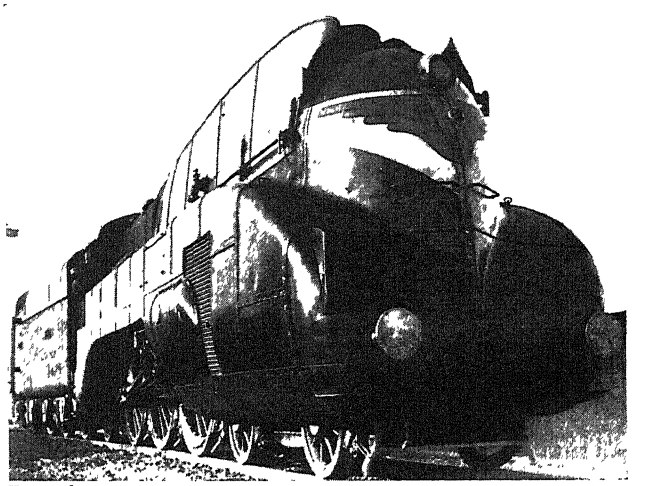
There was no important change in British railway wage rates in 1938.

France. As from the beginning of 1938, all the main-line railways were amalgamated into the French National Railway Company, but the deficit on working continued, being estimated at £16 millions for 1938. To achieve economies, passenger services were replaced by buses on over 2,000 miles of branch line, taxation on railway travel was reduced, charges were increased somewhat, and a large number of decrees were issued regulating road vehicle operators, thus aiming at a reduced road competition. No less than 660 railcars, mostly diesel and some capable of very high speed, were in service in Jan 1938, and a further 140 on order but the first cost of these is heavy, though their operating cost is low : their working life is as yet, however, unassessed. In January the Metropolitan of Paris took over the Luxembourg–Massy–Palaiseau suburban line of the Paris-Orléans Railway, and commenced a modern electrified service. Before the end of 1938 the P.-O. main-line between Tours and Bordeaux was completely electrified Much work of standardization still remains to be done, for instance, the National Railway inherited no less than 237 types of steam locomotives with the 18,000 it took over.

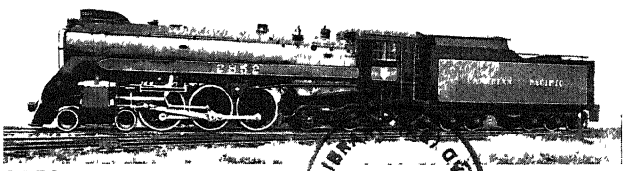
Germany. On March 18, the Austrian Federal Railways became part of the German State Railway system, adding some 3,600 route miles to the German Railway network. During October, in conformity with new frontiers, the State Railway took over about 1,250 route miles of railway previously owned and operated by the Czechoslovak State Railways, mainly in Bohemia. Though detailed figures are not yet available, it is probably true to claim that the German State Railway, with its 800,000 employees and over 40,000 route miles, is the most important railway system in the world. Conversion to electric traction was in progress on the main lines between Nuremberg and Leipzig and Halle, and between Salzburg and Linz. Electrified route mileage in Germany on Jan. 1, 1938, totalled about 1,430 route miles.

The German Railway has been pre-eminent in the development of diesel railcars, both for ultra high-speed and other services. Thirteen of these units consist of two cars, like the original " Flying Hamburger ", but fourteen more are three-car units and there are two four-car units of 1,350 h.p. each, as well as several hundred single and double units for secondary and branch trains. Special studies have been made of fuel consumption; in 1937, the locomotive consumption was 15,500,000 tons, or equivalent to a month's German coal output, and tests of standard and streamlined Pacific locomotives revealed a coal consumption lower by 15·2 per cent, in the latter case on suburban services, and 10 per cent on Berlin–Hamburg expresses. Average coal consumption per German locomotive was 14·20 metric tons per 1,000 loco-km.

Italy. The Italian State Railways' activity in 1938 largely centred on higher speeds and further main-line electric traction conversion, thus reducing the demand for imported coal. Amongst sections recently converted were those between Salerno and Reggio, 260 miles, enabling through working electrically from Bologna, a distance of 660 miles, and in November another 462 miles from Rome to Leghorn and Milan to Bologna and Ancona. Trains can now be worked electrically between Reggio and Ventimiglia; a further 212 miles are under conversion. Almost 3,000 route miles are electrically operated.



Keystone]
MODERN STREAMLINED ENGINE ON THE FRENCH RAILWAYS.



C.P.R.]
1938 C.P.R. ENGINE USED ON MONTREAL–VANCOUVER LINE



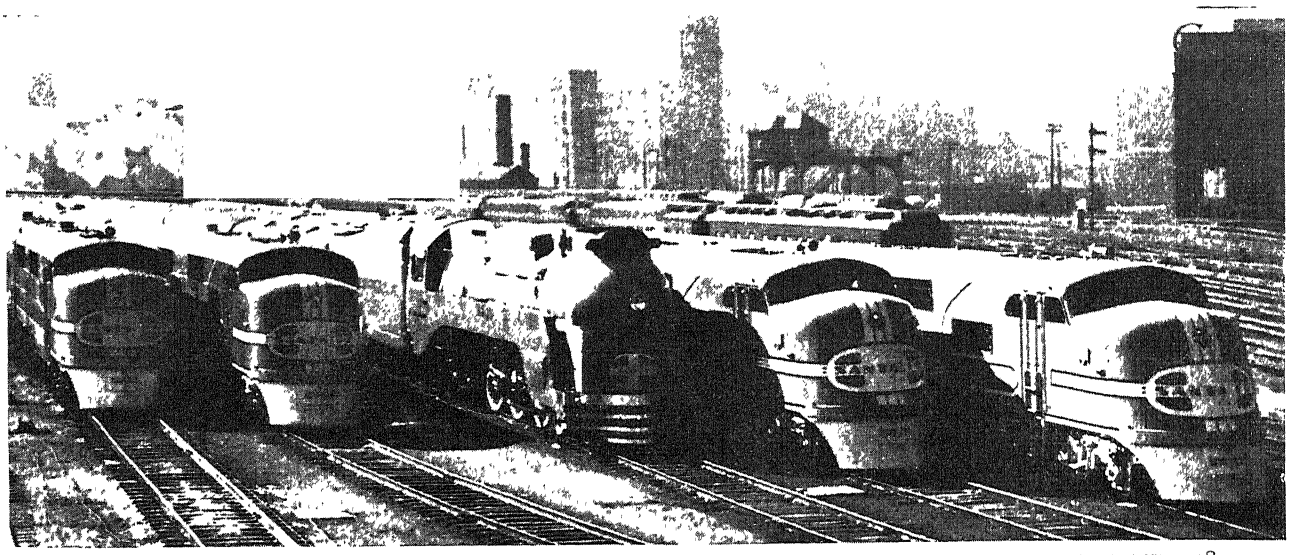
C.P.R.] C.P.R. BUFFET PARLOUR CAR, BUILT 1938



C.P.R.] C.P.R. AUTOMOBILE CAR, BUILT 1938



C.P.R.] C.P.R. GONDOLA CAR, BUILT 1938



Fox Photos] STREAMLINED TRAINS ON THE SANTA FE RAILWAY, BETWEEN CHICAGO AND LOS ANGELES, AT CHICAGO, MARCH 1938

Other European Countries. The Swiss Federal Railways main-line electrification is complete, with 74 per cent of the system converted, handling 93½ per cent of the traffic, certain light electric units recently placed in service have been very successful, and an order has been placed for an extremely heavy electric locomotive. Unique vans for handling motor traffic through the long tunnels deserve mention. The Swedish State Railways plan further large-scale conversions of main lines from steam to electric traction, partly as unemployment relief schemes and partly to reduce coal imports: almost 10,000 miles of road services are now operated by the State Railways. In Norway, an interesting reorganization of the State Railways Administration took place. As a result of the Polish-Lithuanian Agreement, the first train for eighteen years ran between Kovno and Vilna on April 11. The Rumanian State Railways placed in service one of the largest diesel locomotives in Europe, of 4,400 h.p., for working heavy trains over the steep Campina–Brasov section. In the Netherlands, extension of electric services radiating from Utrecht and increased use of diesel-electric trains, coupled with wholesale closing of wayside passenger stations, permitted a large-scale acceleration throughout the whole system. In Jan. 1938 Soviet Russian railway mileage was reported as 52,900 miles, an increase of fifty per cent during the twenty years of the Soviet regime. Electrified mileage stood at 1,000, with further sections under conversion, largely around Moscow.

Asia. After seven years' arduous work by 40,000 men, the monumental Trans-Iranian Railway was completed from Bandar Shah on the Caspian Sea to Bandar Shapur on the Persian Gulf, 865 miles. Stated to cost about £30 millions, this railway was opened by the Shah at Safid Cheshmah, near Teheran, at the end of August. Of the new line, 73 per cent runs through mountainous country, and a link is planned from Teheran to Tabriz, finally to join the Turkish State Railways, already engaged on the construction of a connecting line. When this line, opened to Erzingan in Armenia in October, is finished, through trains will be able to run from Europe to Iran. Farther south the last link joining the Turkish system to Baghdad is under 'Iraq State railway construction between Baaji and Tel-Kochek.

In Ceylon, three four-car diesel trains have inaugurated services from Colombo, and several Indian railways, notably the North-Western, have diesel railcars on order. During the year a commission from England investigated Pacific type locomotive running, owing to the Bihta derailment in 1937 Mention should be made of the financial, technical, and road-rail co-ordination progress of the Nizam's State Railway. During 1938, the Netherlands East Indies State Railways laid in its tracks electrically welded fifty-metre rails.

Africa. The South African Railways, Harbours, and Airways achieved record prosperity, though receipts, totalling £39 millions in 1937, began falling off in 1938. Electrified operation between Johannesburg and Pretoria started in Nov. 1938, allowing South Africa to claim the most extensive electrified railway network in the British Empire, 1,064 route miles, including Cape suburban and Natal main lines and the Rand services centring on Johannesburg Financial surpluses recently earned in South Africa have strengthened the government's financial situation and given confidence to the railways' future. Other African railways recorded satisfactory results, notably the Sudan, Kenya and Uganda, Rhodesian, and Nigerian systems. Nigeria has satisfactorily placed rail, road, and water transport under one director, a possible model for similar territories.

Australasia. Diesel traction grows in favour in Australia; the New South Wales Government Railways placed in service four such trains, some scheduled to cover over 1,250 miles each week, running to Broken Hill. Droughts increased expenditure on the N.S.W. and Victorian Railways, but increased efficiency largely offset higher costs of materials, stores, etc.; the former state had a ratio of expenditure to receipts of seventy per cent. The Victorian Railways' "Spirit of Progress" *de luxe* air-conditioned all-metal train, using welded construction extensively, has attracted much attention, rail-joint welding is standard on that railway, but profit was not sufficient to cover interest on capital.

Record earnings were attained by the New Zealand Government Railways in 1937–38; the adoption of a forty-hour week increased operating costs by £440,000. Suburban passenger services and some freight services are worked electrically around Wellington.

Canada. The Canadian National and Canadian Pacific both suffered from crop failures, though when the 1938 wheat moves, the financial position of the country and the

railways should improve The C N R also suffered from low automobile output in Michigan, served by its Grand Trunk line to Chicago A new transport Act allowed Canadian railways to make "agreed charges" with shippers in the English manner, thereby helping them against road competition On the technical side, new locomotives and extended air-conditioning assisted passenger receipts and working Notable was the inauguration of commercial air services by Trans-Canada Airways, the C N.R. is playing a leading part. The first air-mail service was opened between Winnipeg and Vancouver on Oct. 1

Mexico. Mexican Railways were taken over by government decree on May 1, 1938, and are now operated for the government by the staff · expenditure must not exceed 85 per cent of receipts. The result of this interesting experiment cannot be assessed yet, but will be closely watched.

South America. Argentine railways pioneered in developing diesel traction, many additional diesel railcar units were placed in service in 1938, admirably suiting areas where density of traffic is light and coal imported Thus the Buenos Aires Great Southern and its ally the B A. Western added over 100 single-unit cars; the B A. Pacific in its Junin workshops built six cars embodying Ganz type engines. One such car made an excellent run from Buenos Aires to Mendoza, 660½ miles, in 10 hrs. 27¾ mins., namely 63 m p.h. The Central Argentine also has diesel units, while the metre-gauge Argentine State Railways, already using many Ganz type cars, has ordered several three-car units for the Cordoba–Catamarca line and suburban services. This administration completed the first Argentine-built locomotive. Some trains are now air-conditioned. In 1938, the Argentine Chamber of Deputies approved government purchase of the Argentine Transandine and Cordoba Central Railways, a policy leading perhaps to nationalization of other company-owned lines. The Central of Brazil is electrifying certain sections.

Notable Runs. Railway traffic decreases in many countries, notably the United States, France, and Great Britain, and the consequent need for the utmost economy resulted in checking the tendency towards further accelerated high-speed services. The following table, extracted from statistics compiled yearly by the *Railway Magazine*, gives a picture of the world's high-speed train operation. (C. E. R. S.)

APPROXIMATE DAILY MILEAGE OF RAILWAY RUNS AT HIGH SPEED (1938) *

	70 m.p.h. and over	60 m p.h. and over
Belgium	—	1,573 (839)
Denmark	—	664 (741)
France	1,850 (2,016)	14,594 (14,678)
Germany	3,043 (1,504)	10,236 (8,235)
Great Britain	730 (730)	11,665 (11,038)
Italy	131 (131)	2,125 (1,317)
United States	4,415 (3,194)	48,247 (37,860)
Poland	—	107 (—)
Switzerland	—	150 (—)
Czechoslovakia	—	88 (—)

* 1937 figures in brackets.

United States. The railroads of the United States entered the year 1938 with their earning power diminished in alarming degree. That condition continued throughout the greater part of the year, in spite of heroic efforts to hold down expenses, but signs of encouragement were apparent during the last quarter, when gross revenues were greater than in the same period of 1937. There were hopeful indications also of further gains in business activity, and promise that in the 76th Congress there will be a disposition to enact helpful legislation

There was no substantial change during the year in the general railroad financial situation The proportion of bankrupt railroad mileage in process of reorganization remained at slightly less than one-third, but the position of a second third, which had been hovering on the brink of bankruptcy, became more precarious, and the margin of safety of the remaining third of undoubted solvency became smaller

Basing their case on the urgent need of additional revenues to offset the 1937 wage increases and the higher costs of materials and taxes, the railroads late in 1937 asked the Interstate Commerce Commission to authorize a fifteen per cent advance in freight rates. The Commission's decision, in March, was but partially responsive. It granted an increase of less than six per cent, and the higher rail rates, when made effective, tended to divert more traffic to lorries. After the disappointing outcome of the effort to improve income by higher freight rates, the Eastern railroads returned to the Commission with a petition for authority to increase the passenger mile rate in coaches from two cents to 2½ cents. This the Commission allowed in June, but the results have been disappointing. Passenger revenues under the 2½-cent rate have been less than under the two-cent rate. How much of the decline is due to resistance to the higher rate, and how much to the continued recession, is difficult to determine. In the West, where the two-cent rate was not advanced, the decline in passenger revenue has been relatively less than in the East, with its 2½-cent rate.

Shortly after the Commission had denied the full measure of the requested advance in freight rates, the railroads decided that their only hope of relief would be in lower wage rates. Acting nationally they notified their employees that, as from July 1, wage rates would be cut fifteen per cent. The proposal was resisted by the labour organizations, joint negotiations and mediation by the Labour Board failed, and the issue went to a fact-finding board appointed by President Roosevelt. The finding of the board (dated Oct. 29, 1938) was that the proposed wage cut should not be made. The railroads, hesitating to precipitate a nation-wide strike, and fearing that the sympathies of the government and a large part of the public would be with the employees, withdrew the notice of the wage cut, but they secured an implied assurance by government and labour leaders that relief of some kind would be forthcoming in remedial legislation.

In line with that assurance, the President appointed an advisory committee, consisting of three railroad executives and three leaders of railroad labour, to study the whole problem and submit recommendations. Their report was submitted to the President on Dec. 23.

The major recommendations were (*a*) that there should be created a new transportation board (including the Interstate Commerce Commission) with authority to regulate all other forms of transportation as well as railroads; (*b*) that rate-making procedure should be revised to allow carriers to store up reserves in good times to tide them over hard times; (*c*) that the law prohibiting railroads from charging a higher rate to an intermediate point than to a more distant point on the same route should be repealed; (*d*) that barge lines owned and operated by the government should be disposed of, and that tolls should be collected for commercial use of inland waterways; (*e*) that a special court should be created to handle railroad reorganizations;

(*f*) that the government should assume the cost of level-crossing elimination, (*g*) that the government should pay full rates for railroad transportation; (*h*) that the law relating to consolidation should be amended so as to leave the initiative to the railroads; and (*i*) that restrictions now applying to loans by the government be lessened so that railroads might more easily obtain temporary help from that source.

The railroad problem is fundamentally one of an alarming shrinkage in net income and the threat of wholesale insolvency. That shrinkage is due primarily to the depression, and secondarily to intensification of competition. In freight service, competition is with the "for hire" lorries, inland waterways, pipe-lines, power transmission lines, and privately owned lorries of shippers. In passenger service the competition is with buses, aeroplanes, and private cars.

To a large and easily determinable extent, transportation on the inland waterways is subsidized by the government. To a much smaller but not easily determinable extent, there is a subsidy in favour of "for hire" lorries and buses. An important decision by a Federal district court in Illinois (*Brashear* v. *Hughes*, Nov. 15, 1938) upholding a cost study indicating that motor vehicles are paying very much less than their fair share of highway costs, is focusing attention on the subject.

In whatever degree competing forms of transportation are currently subsidized, the railroads are at a competitive disadvantage. Yet all the competing agencies were in effective operation in 1928 and 1929, when railroads were fairly prosperous. Since then, competition has been intensified in degree, but not to an extent that accounts for the present perilous state of railroads. This leads us to conclude that the depression, not competition, is the main cause of railroad distress and that with a restoration of normal business activity much of the trouble will disappear or be mitigated.

The vulnerability of railroads in their low powers of resistance to shrinkage in net income is evidence of the weakness of their capital structure. Funded debt, with fixed interest charges, forms too large a part (over sixty per cent) of the total capitalization. Fixed rentals for leased lines, made years ago when railroads enjoyed a virtual monopoly, are too high for existing conditions. Failure to give realistic recognition to obsolescence results in overstatement of investment value. Failure to provide sinking funds out of income, to pay off debt in whole or in part at maturity, is causing embarrassment in the refunding of maturing obligations. Some of these defects will be corrected in the reorganization of the many properties now in the hands of receivers or trustees, and some may be remedied voluntarily without reorganization.

The action to be taken by the President on the recommendations of his advisory committee, and the action to be taken by Congress on the recommendations that the President may make, remain to be seen. That both the President and Congress realize the desirability of saving the railroads from further collapse is evident. The President has stated that he does not want government ownership, and apparently there is little sentiment in that direction in Congress. Nor is it desired by the organized shippers. There is, then, a fairly favourable setting for a sympathetic reception of constructive proposals pointed towards the healthy maintenance of private ownership, especially when presented jointly by management and labour.

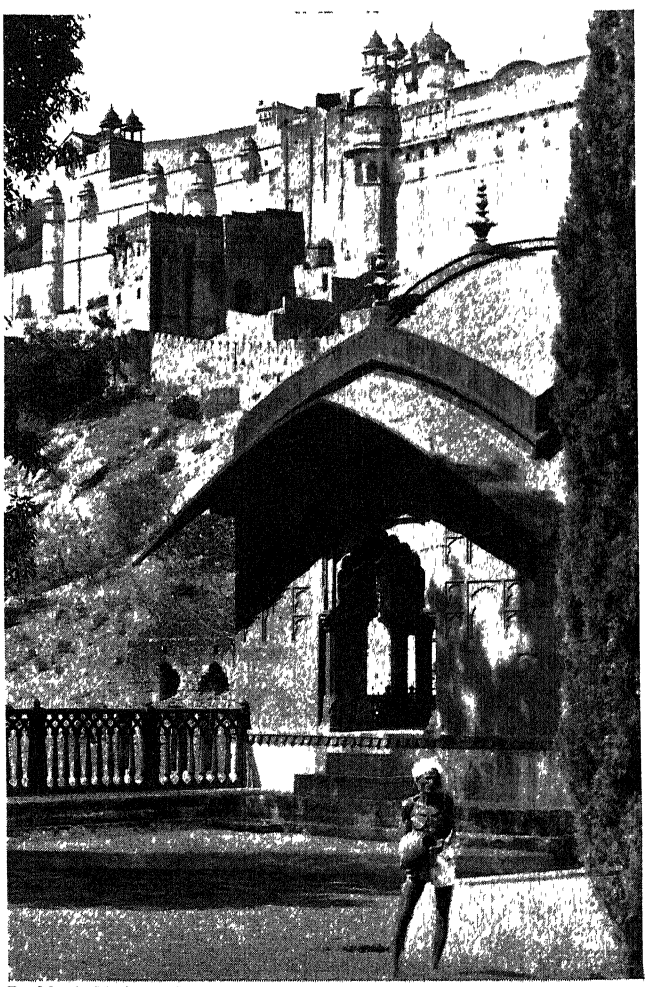
While the recommendations of the President's advisory committee are the latest to be presented, and have had the greatest publicity, several other programmes, somewhat similar in scope and objective, sponsored by commercial and financial organizations and by the railroads themselves, will undoubtedly be presented to Congress. The railroad problem as a subject for legislative debate is among the hardiest of perennials. (W. J. C.)

RAJPUTANA. This is a group of twenty-three States lying to the north of Central India. With four exceptions they are ruled by rajput chiefs of ancient lineage and feudal traditions. The most important are Jodhpur, Udaipur, Jaipur, and Bikaner. The resident (Mr. A. C. Lothian) has his seat at Mount Abu, and is *ex officio* the chief commissioner of Ajmer-Merwara. The episode which attracted most outside attention to Rajputana in 1938 was a scene which might have been lifted from the middle ages. A feudatory (Sikar) of the Maharaja of Jaipur had a difference with his overlord about the marriage of his heir. It came to a head when Sikar declared rebellion and shut himself up in his fort with 30,000 of his followers. The Jaipur army, with cannon and machine-guns, promptly invested the place, and all the motions of siege operations went on for three months. The Maharaja, who had been on a visit to Europe, was induced to return and intervene, peace being thus ultimately restored. (ME.)

Area and Population:

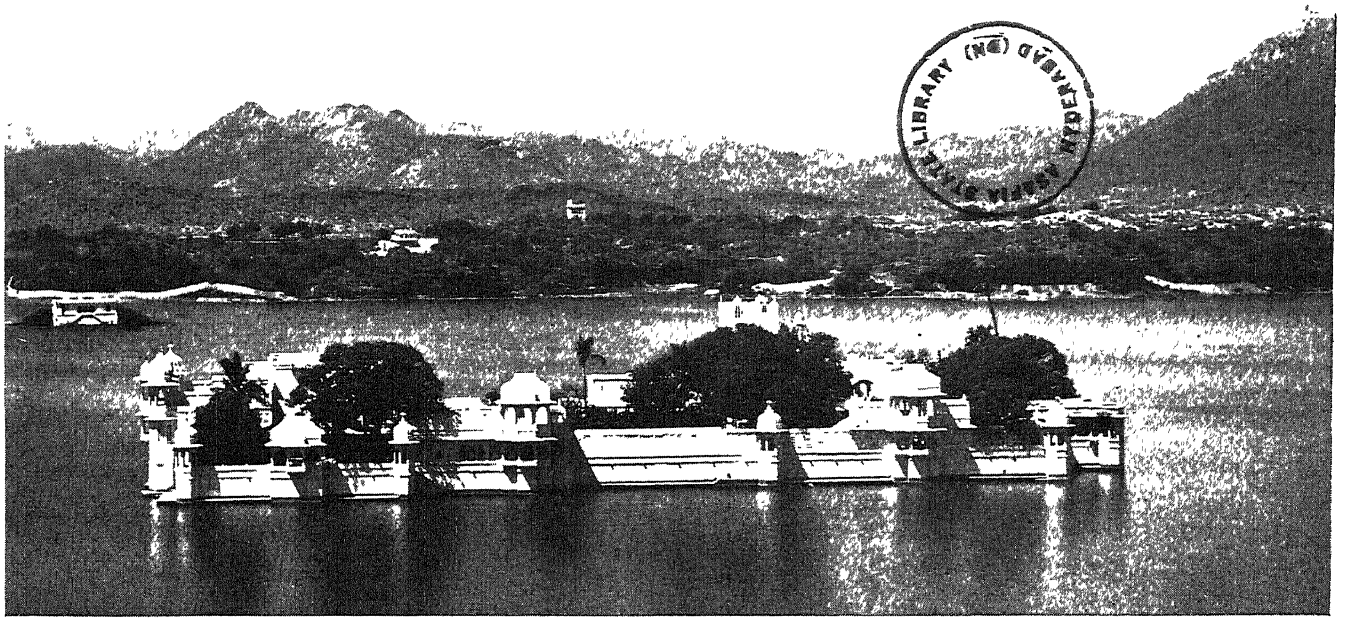
Area 132,248 sq. miles (excluding Ajmer-Merwara).
Population (1931) 11,526,065 (excluding Ajmer-Merwara).

States: the area includes 21 Indian States, one Chiefship, one estate and the British India district of Ajmer-Merwara.



Dr. Martin Hürlimann]

THE CASTLE AT AMBER, RAJPUTANA



P. Popper] UDAIPUR, RAJPUTANA. THE MARBLE PALACE IN LAKE PICHOLA

Chief States	*Population* (1931)	*Ruler*
Udaipur .	1,566,910	Maharana Sir Bhupal Singh
Bikaner .	936,218	Maharaja Sir Ganga Singh
Jaipur .	2,631,775	Maharaja Sir Man Singh
Jodhpur .	2,125,982	Maharaja Sir Umed Singh
Kotah .	685,804	Maharao Sir Umed Singhji

Railways 1937 : 3,259 miles (1,000 Indian Government).
Revenue :
Udaipur . Rs. 80,60,000 Bikaner. Rs. 1,25,00,000
Jaipur . Rs. 1,25,00,000 Jodhpur Rs. 1,71,57,000
Kotah Rs. 50,00,000.

RAYON. When a future historian writes the story of the rayon industry he will probably point to 1938 as a revolutionary year. Until then rayon was made from vegetable or animal bases, but in 1938 filaments were produced from minerals. The viscose acetate, cuprammonium, casein, chitin, and other well-known artificial filaments are produced by breaking down the cellulose in other material and later building it up again, and so are not true synthetics as are the new filaments produced from coal, water, and air. Christened "Nylon", the newest "artificial silk" differs radically in physical and chemical properties from other filaments. It is the outcome of nearly ten years' research aimed at synthesizing, from readily available materials, a new group of chemical compounds capable of meeting deficiencies in imported U.S. industrial materials. Although as fine as spiders' web—much finer than silk—Nylon filaments are as strong as steel, more elastic than natural fibres, and possess a beautiful lustre. Nylon presents no difficulties in dyeing or making up. The first big plant for it is being erected in Delaware.

During 1938 many improvements were effected in rayons and staple fibre, mainly in the fields of increased strength, added elasticity, and reduced creasing, but actually production made little headway. The estimated world production of continuous filament rayon in 1938 is 1,052,000,000 lb. compared with 1,280,000,000 lb. in 1937. The estimated production of the principal countries is :

	1938 million lb.	1937 million lb.
Japan . . .	270	326
U.S.A. . . .	222	312
Great Britain .	116	119
Germany . . .	142	164
Italy	116	106

Japan, Germany, and Italy have been driven to almost reckless expansion in the production of synthetic textiles, for reasons which are well known, but the expansion is mainly in "artificial wool" and "artificial cotton" products, classed in the following table as staple fibre. Japan has even encouraged the output of staple fibre of one sort or another to the detriment of continuous filament rayon :

	1938 million lb	1937 million lb.
Japan . . .	338	172
Germany . . .	330	224
Italy	194	156
U.S.A. . . .	30	19
Great Britain . .	34	29

The output of staple fibre and mixture yarns on English cotton-spinning machinery over the last five half-years was : Six months to

Sept. 1936 . . . . 8,663,000 lb.
March 1937 . . . . 10,123,000 ,,
Sept. 1937 . . . . 10,814,000 ,,
March 1938 . . . . 9,488,000 ,,
Sept. 1938 . . . . 8,198,000 ,,

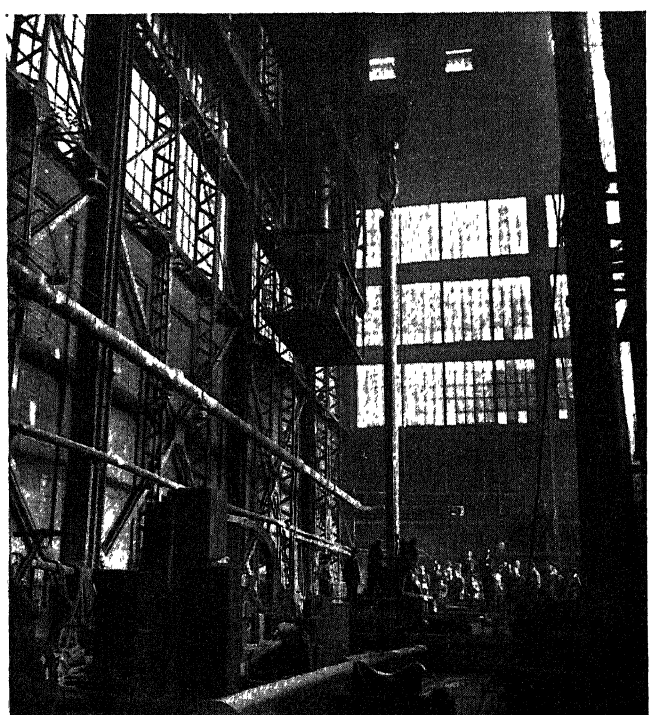
The production of textile filaments from casein is proceeding in many countries. At the Manchester *Textile Recorder* Exhibition in October, Courtaulds Ltd. showed, for the first time, yarn produced from casein, or as the lay press put it, from buttermilk. "It is a distinct possibility that in ten years' time apparel will be practically all made from synthetic textiles, whilst household and industrial uses will constitute the principal markets for cotton", says Dr. S. J. Kennedy, of Pacific Mills, New York. With so many new types of synthetic textiles, it is becoming increasingly

difficult to determine whether they shall be classified as "rayon" or not. The United States' official definition rules out lanital and other fibres of casein base, the chitin group, and the new mineral base group, while the United Kingdom Customs have charged duty on casein textile as "artificial silk". (W. Hu.)

REARMAMENT, BRITISH. The year 1938 was marked, so far as the British Army and the Royal Air Force were concerned, by attempts to fill the gaps inherited from the past Sometimes these efforts seemed half-hearted, sometimes on the contrary they appeared almost feverish. At the end of the year substantial progress had been achieved, but whether the steps taken were adequate is, and must remain, a matter of controversy. Naval rearmament was, from the start, more advanced. The combination of economy with idealism which had so powerfully affected the estimates of the other two fighting services, had in the years before the expansion influenced the Navy estimates a great deal less; and the strengthening of the Navy was the first item in the British rearmament programme seriously to be taken in hand

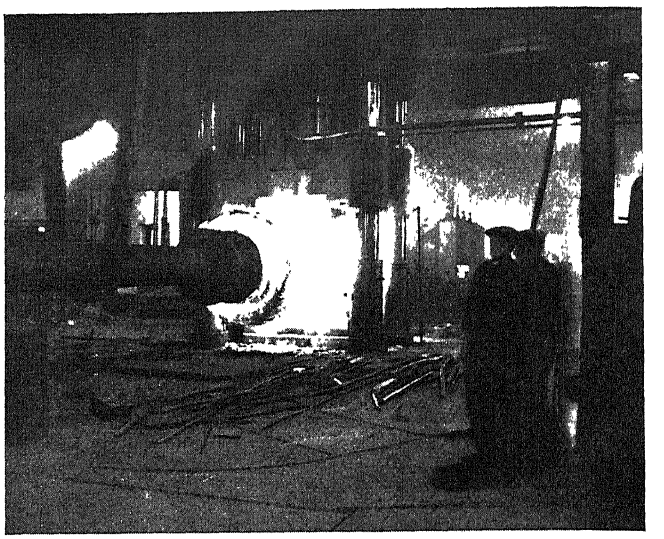
The estimates of all three service departments for the financial year 1938–39 showed substantial increases over those of the year before, and they had this feature in common, that in each case £30 millions was raised by loan under the terms of the Defence Loan Act 1937. The total defence expenditure contemplated by the government White Paper published before the separate departmental estimates were presented, reached the grand total of £343,250,000—which was actually increased by subsequent supplementary estimates. The character of these original estimates already ensured that the total estimated cost of £1,500 million for the whole rearmament programme would be exceeded. The year's events made that result doubly certain.

The Navy estimates totalled £123,207,000—an increase of about £18 millions—without taking any account of the new construction programme for the year. This included two capital ships, an aircraft-carrier, four large and three small



Fox Photos]

A NAVAL GUN BEING LOWERED INTO A HEATED TUBE FOR TEMPERING



The Times]

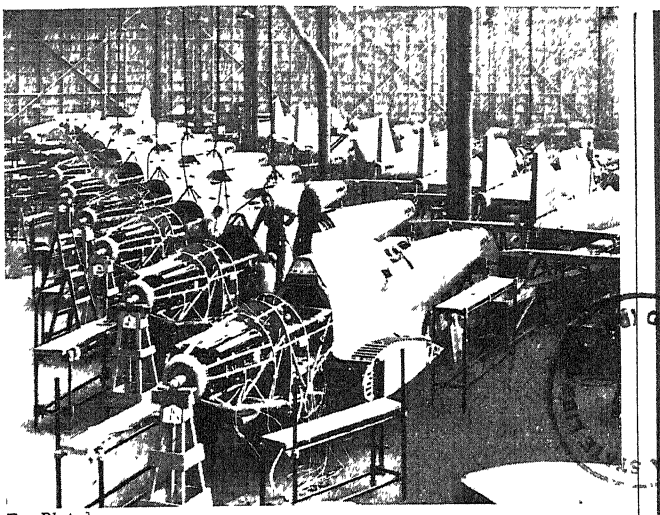
AN EIGHTY TONS ALLOY STEEL BILLET, FROM WHICH THE JACKET FORGING OF A 14-IN NAVAL GUN IS BEING MADE, UNDER A 3,000 TONS PRESS

cruisers, three submarines, three minelayers, two river gunboats, a destroyer depot ship, a Fleet Air Arm supply and repair ship, and several small craft. The expenditure in respect of this, covered by a supplementary estimate in so far as it was to be incurred within the current year, amounted to the surprisingly small figure of £2,410,000 This was due to the placing of orders in respect of the battleships being postponed till the end of the year and to other delays in the more important parts of the programme.

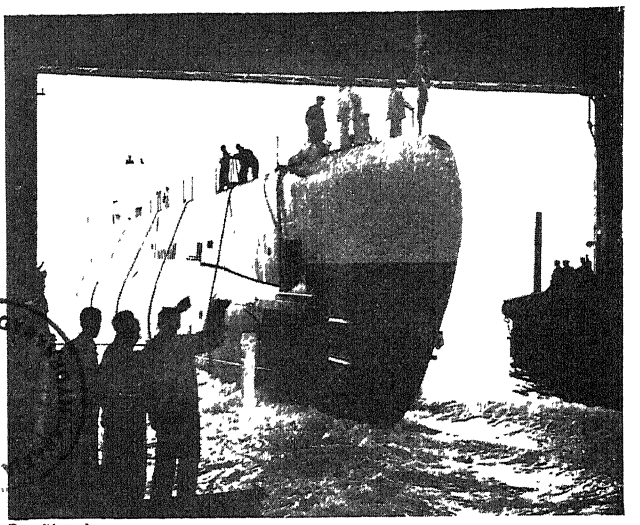
The Army estimates totalled (excluding pensions) £104,821,000, an increase of £22 millions odd on the figures for 1937–38. £13 million of this increase was explained by additional expenditure on warlike stores, such as ammunition, guns, and tanks; the expenditure under this head was estimated at £43 millions, which, as one commentator noted, was more than the total military expenditure of the country in any of the years 1926–34.

The estimates submitted by the Air Ministry showed the same central features as those of the War Office: an increase of expenditure by nearly £23 millions to a total of £111,502,000, most of this increase being due to additional outlay on technical and warlike stores, such as aircraft, engines, armament, and petrol, larger supplies of this last were to be purchased, partly with a view to storage. This total was about six times as large as that of an average year before the expansion, which in three years had raised the strength of the Air Force from 52 to 123 squadrons, without counting oversea squadrons and the Fleet Air Arm.

The main interest of the year lay not in the main Air estimates but in subsequent developments. It had become apparent that sources of domestic supply of aircraft were not sufficient to provide the expansion required within a reasonably short time. Accordingly, in April a mission under Air Commodore A. T. Harris left to investigate the possibilities of the U.S.A. and Canada as supplementary and alternative sources. Following its recommendations, contracts were made for 200 aircraft for general reconnaissance and 200 for advanced training duties. In July, a further mission, with Sir Hardman Lever as its head and Marshal of the Royal Air Force Sir Edward Ellington as one of its members, left for Canada to discover its potentialities for the production and sale of bombers. On this mission's return in September arrangements were announced for the long-range purchase of bombers from Canadian firms. In the



Fox Photos]
FINAL ASSEMBLY OF FAIREY " BATTLE " AIRCRAFT FOR THE R A F



Fox Photos]
THE SUBMARINE " SEAL " LAUNCHED AT CHATHAM, SEPT 27, 1938

meanwhile a supplementary estimate for £22,901,000—all except £1,000 to be raised by loan—had been approved This had allocated £11 millions odd to the purchase of technical and warlike stores and £8 millions to buildings and land. In the words of Sir Kingsley Wood, the Air Minister, " In order to implement the new programme, which aims at . . . a first-line strength of approximately 2,370 aircaft by March 1940, it is necessary . . . to construct additional stations, to extend existing ones, to place further large orders for aircaft and other equipment, and to secure acceleration of deliveries under existing orders ". These efforts were, of course, made too late greatly to modify the position at the time of the Czechoslovak crisis, which found the modernization of the Air Force far from complete.

Perhaps even more important than the production of aircraft was that of anti-aircraft guns. During the year the new 3·7 guns came into active production, but in spite of great political pressure from outside the government deliveries of these up to the September crisis were exceedingly small, and knowledge of this fact no doubt played some part in the negotiations before and at Munich. Thereafter production was accelerated, and is expected to reach its height in 1939, when a new 4·5-in. gun will also make its appearance (W. T. We)

Finance. The National Defence Loans Act of 1937 envisaged a five-year borrowing programme of £80 million a year. In the financial year 1937–38, £197·3 millions was spent on rearmaments out of revenue (*i.e.* taxation) and £64·9 millions out of borrowed money. For the financial year 1938–39, the budget estimates envisaged £253 millions to be spent out of revenue, and at least £90 millions to be spent out of borrowing. Any expenditure authorized by supplementary estimates, is also to come out of borrowing, and it is already known that this will raise the total to about £115 millions. Up to Dec. 31, 1938, £238 millions had been spent out of revenue, and only £17 millions out of borrowing, but for undisclosed reasons the Treasury's practice is to defer the expenditure out of borrowing until the tag-end of the financial year. Meanwhile, two Defence Loans have been issued—one for £100 millions at 2½ per cent in April 1937, and the other for £80 millions at 3 per cent in June 1938. There is no attempt to synchronize the raising of these loans and the corresponding expenditure of their proceeds. Both loans were raised at what the Treasury felt to be suitable moments, and also long in advance of the time when the money was needed; in fact, only £82 millions of the £180 millions had up to the end of 1938 been spent. The balance of the money has been temporarily applied to a reduction of the floating debt, which, other things being equal, will increase again as the money is spent.

So far the preponderance, both in the budget estimates and in actual expenditure, has been heavily in favour of financing out of taxation. Apart from a possible and very reasonable desire to prevent an inordinate increase in the National Debt and in the redistribution of the national income that the service of that debt involves, it is difficult to discern any definitive principles behind that preponderance. Any attempt to do so involves the preliminary answering of certain questions. First, how much of the rearmament expenditure is on capital goods and how much on consumers' goods? The pay and maintenance of the armed forces clearly falls within the latter category. But what about uniforms, equipment, or even weapons, which have a short life, or which, through new invention or improvements, rapidly become obsolete? Here is one reason for weighting the balance against borrowing. Next, no one can see the end to the rearmament programme, and it is known that it is rapidly growing and being accelerated. There is also a limit to the taxable capacity of the nation, and that limit cannot be far off. Here is an additional argument for minimizing and deferring borrowing as long as possible. But apart from these basic arguments, it is difficult to see what criterion is applied, every time more money is issued from the exchequer for rearmaments. It is a pure question of book-keeping whether each successive issue is labelled " ordinary expenditure ", or " an issue authorized by the Defence Loan Act ". The only limit on the Treasury is that the amount for each year labelled " ordinary expenditure " must not exceed the amount so authorized by the budget, but it is clear that no attempt is made to spread loan expenditure evenly over the whole year. (N. E. C.)

RECLAMATION. Some of the reclamation schemes now in progress deal either with the irrigation of arid lands or with the drainage of marshes which in the course of time have been partly reclaimed from the sea, by the growth of vegetation on the silt brought down by rivers. The process may be accelerated by the planting of selected vegetation which is best fitted to the area which is being reclaimed.

In Britain, on the small flats of tidal rivers of Hampshire and of Dorset, thousands of acres of mudland have been covered by the growth of a coarse grass, *Spartina Town-*

shendii Successful experiments have been made on mudlands in other tidal areas where *Spartina* sods from the Solent have been transplanted; the grass has grown and spread rapidly and after several years will be the means of converting soft mud flats into hard ground.

Reclamation from the sea is often a subsidiary part of a scheme for the construction of harbours as in the case of the new harbour at Capetown (*see* DOCKS AND HARBOURS). A scheme of somewhat similar character is in progress at Port of Spain, in the island of Trinidad, B.W.I., where, owing to shallow water close inshore, sea-going vessels have to anchor some three miles off-shore. There is under construction a deep-water wharf 3,300 feet long running approximately east and west and an approach channel to be dredged to a depth of 30 feet below low-water level

On the north of the sea-wall an area of land, made up mainly of clay and sand, is to be reclaimed, this land, being close to the commercial part of the town, will be of considerable value.

Australia. The vast arid regions which occupy about one-third of the land area of Australia (1 million sq. miles out of an area of 2,974,000 sq. miles) are in geographical positions and under weather conditions which make reclamation impractical for the large areas which exist in the heart of the continent. The soil of these great deserts is, however, rich in plant foods and with regular water supply could be converted into fertile land.

Around the borders of the continent considerable areas have been and are being reclaimed near the few large rivers, by the construction of dams and in the large artesian basins, where the irrigation often entails very deep bores.

One-fourth of the State of Victoria is, for example, now watered by artificial means at a cost of over £25 millions.

Italy. In Italy the action of rapid streams in disintegrating the Alps and the Apennines and the deposit of the resulting sediment on the coast, during many centuries, has made very considerable additions to the coastal area.

In some districts, the alluvial plains taken from the sea by this action of the rivers have shrunk and formed marshes which are now below the sea level. In the reclamation of these low-lying marshes it is necessary to form canals to lead the "high water" rivers directly into the sea and to pump the water, which collects in the low-lands either into the sea direct or into the high water canals.

During the Fascist regime provision has been made for the expenditure of 7,000 million lire in land reclamation for a period of fourteen years to 1943. Of this sum the Treasury provides about sixty per cent and the land-owners the remainder. It is thought that when completed, there will be 12 million acres added to the cultivated land of Italy and that the cost will exceed that of the estimates made.

Three of the larger schemes include the drainage and development of thousands of acres of land. The Pontine Marshes, 200,000 acres of which in 1930 were under water, have been reclaimed and cultivated; there are two new towns, the total population of the area being 60,000. The Grosseto plain, at one time a malarial marsh, has been almost entirely reclaimed and cultivated. In the Ferrara district, where the greater part of the area is below the level of the Adriatic, the drainage has to be effected by the use of powerful pumping machinery.

United States. In the United States, the Bureau of Reclamation put forward, during 1938, a programme of construction which is the largest in its history. Work was in progress in 32 projects in twelve States. Many of these projects are of great dimensions and importance.

In many cases the reclamation of land is effected by the building of huge dams and the making of long canals which provide the irrigation necessary for changing arid districts into land of great fertility, as is contemplated in connexion with the 130-mile Coachella branch canal which ultimately will bring into fruitfulness approximately one million acres of land in the Imperial and Coachella valleys of Southern California.

Projects now being constructed by the Bureau will add approximately 2,500,000 acres to the cultivated area of the arid and semi-arid States. When completed, these new projects will make available more than 31,000 farmsteads—which does not approach fulfilling the demand. It is estimated that opportunities will be provided for a total of 825,000 people, on 41,600 farms and in cities and towns whose very sites have not as yet been determined. (*See* also DAMS; DOCKS AND HARBOURS; IRRIGATION AND FLOOD CONTROL.)

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RED CROSS. At the end of 1938 it was announced that £71,000 had been contributed to the relief of war sufferings in Spain through the International Red Cross; three delegations were at work on both sides, and 4,330,000 messages had been exchanged between prisoners of war and separated families; since Sept. 1937 a delegation had also been at work in China, the American society taking a large share in both these campaigns.

In many countries, the training of Voluntary Aids available for service in time of emergency is undertaken by national Red Cross Societies, members of the British organization also engaging in services for "the promotion of health, the prevention of disease, and the relief of suffering at all times", first-aid on the roads, supplementary nursing, orthopædic clinics, infant welfare, etc.; the British Red Cross Society also organizes a voluntary blood transfusion service, with membership in London alone of 2,374 donors, and is taking a prominent part in the campaign against rheumatism, nearly 146,000 treatments being recorded in the last report. In common with the Orders of St. John and St. Andrew, the Society is very active in instructing its own members and the general public in Air Raid Precautions, and in 1938, 27,000 certificates were awarded to anti-gas trainees

In the United States the American Red Cross (organized in 1881 and supported entirely by public contributions) during the past fourteen years has assisted victims of 1,252 disasters; it maintains nurses in 513 communities, carries on work among service and ex-service men and their families, and sponsors the Junior Red Cross in 41,892 schools. Since 1914 it has granted certificates to 884,649 persons completing courses in life-saving, to 951,639 mothers and girls in home hygiene, and since 1910 to 1,725,406 persons completing standard courses in first aid. In its campaign against accidents in homes and on highways more than 4,000 fixed and mobile emergency first-aid stations are in use. During the year ending June 30, 1938, it served in 174 disasters, its nurses made 1,043,954 visits to or on behalf of the sick, and classes in home hygiene and care of the sick were conducted by 1,775 instructors, 58,754 persons completing the courses.

The XVIth International Red Cross Conference was held

in London in June, and was attended by over 300 delegates from 55 countries; the previous Conference (1934) was held in Tokyo, and the next (1942) is to be at Stockholm. (L. H. D.)

REFERENDUMS. The referendum which attracted the most attention during 1938, of course, was the one that never happened, the projected Schuschnigg referendum on Austrian independence that settled the fate of Austria Faced after his final Berchtesgaden interview with Herr Hitler with an evident Nazi determination to carry through the absorption of Austria by any means and in the shortest time, Chancellor Schuschnigg turned to the democratic technique which the Nazis themselves had so long advocated—the plebiscite. On Wednesday March 9 he announced that a plebiscite would be held on the following Sunday, when the country would be invited to pronounce on the question: "Are you for an independent and social, a Christian, German, and united Austria?" At first it was stated that only "Yes" ballot papers would be provided, that the "No's" would have to make out theirs for themselves and that secrecy would only be offered to "those who wanted it". Later these imitations of Nazi tactics were abandoned, "Yes" and "No" voters put on an equality and the secret vote made universal. But the limitation of the vote to those over 24 years of age—the age of franchise under the Austrian constitution—and the shortness of the notice made the plebiscite intolerable to the Nazis. Their main strength lay in youths under the age of 24, and the shortness of the time before the poll left them no time to get a terror campaign under way. Impartial observers estimated the probable majority against them at between 65 and 80 per cent, so the invasion and the annexation were necessary sequels. A month later a plebiscite conducted under the usual Nazi conditions both in Austria and in Germany gave these figures, in Austria alone: For the union, 4,455,015; against, 11,807.

A referendum conducted on yet less impartial principles in Rumania in February, on the new authoritarian constitution gave the following results. Of 4,649,163 electors, 4,288,808 went to the poll, 4,283,395 voting for the new constitution and 5,413 against. There was no question of secrecy here: voters had to appear before the nearest municipal authority and declare by word of mouth, yes or no, whether they approved. And the referendum had been arranged so quickly that few people in the country districts knew what it was about.

There were two important referendums in Switzerland during the year. In the first, in the month of January, the voters of the canton of Vaud followed the example of those of Geneva and Neuchatel and voted by 34,600 votes to 12,700 for the prohibition of the Communist party. In the second, in July the question was that of substituting a Federal penal code for all Switzerland for the various cantonal codes, which differed much from one another. Only 55 per cent of the electorate went to the polls, and had not the principle of the change been already decided at a previous referendum, the proposal must have failed. For though the result in individual votes was 358,487 for and 309,600 against, the result by cantons was 12½ against and only 9½ for, and for a constitutional change a majority of cantons as well as of individual voters is necessary.

The Paraguay-Bolivia arbitration treaty was approved in Paraguay on Oct. 10, in the first Paraguayan referendum. United States referendums, provided for under the various state constitutions, were many. The most interesting, however, were these: Income-tax was rejected in Washington and Maryland, old-age pensions in California and Colorado Oregon restricted the rights of strike pickets and ordered medical examination of prospective husbands and wives, Maryland prescribed a two-day interval between issue of marriage licence and wedding, and New York voted into its new constitution a Labour Bill of Rights.

REFORMED CHURCHES: *see* PRESBYTERIAN CHURCH

REFRIGERATION AND HOUSEHOLD REFRIGERATORS. Domestic refrigerators continue to be improved by increasing efficiency and convenience and decreasing cost of operation. Progress towards durability, towards more efficient and more economical operation of the electric refrigerator has been accomplished by (1) placing the evaporator in the centre top rather than at the side top of the food chamber, thus permitting more efficient use of the cooling process; (2) using sealed-in units more simply designed, which require less servicing as the machine ages, (3) diminishing vibration effects by suspending the mechanical unit on springs and rubber blocks; (4) all-steel box construction, ensuring rigidity, sturdiness, and non-warping doors; (5) increasing the surface area of the condensing coils, so that either faster condensation occurs and therefore allows more evaporation with each cycle, or a lower operation pressure is used for the same amount of refrigeration, (6) smaller motors consuming less energy; (7) stainless-steel evaporators; (8) increasing the thickness of the insulation; (9) new refrigerants which simplify some problems of mechanical construction.

The average mechanical refrigerator, without additional cost to the purchaser, carries a five- to ten-year warranty against mechanical defects in the construction. The electric mechanism is protected by an automatic circuit-breaker, which operates when a dangerous overload occurs. It automatically remakes the circuit when the danger is removed.

Improvements in gas- and oil-operated refrigerators have been made by increasing the rate of refrigerant condensation through the use of more effective cooling methods, such as surrounding the condenser with a sealed coil containing methyl chloride. The burner design has also been improved.

REINHARDT, MAX (1873–), Austrian theatrical producer of Jewish origin, was born near Vienna and began his professional career at Salzburg in 1893, in the following year making his first success in Berlin where, later, he was to build theatres and produce plays on new and original lines. The great work that for so long he had done for dramatic, and especially German dramatic, art (see *Ency. Brit.*, vol. 9, p. 80, where is an account of his earlier career) did not save him when the National Socialists came to power; and in April 1933, the first producer of the early works of Richard Strauss, the originator of the Salzburg Festival, and probably the most original creative artist the theatre has ever known, was banned in Germany, and the great *Schauspielhaus* that he had founded in Berlin was closed. Reinhardt retired to his castle, Schloss Leopoldskron, outside Salzburg, where he was domiciled till shortly before the *Anschluss* in March 1938; he was able to leave Austria (though his castle was taken over by the Nazi authorities) and eventually settled down in Hollywood, where, with Miss Constance Collier, the English actress, he opened a school of dramatic art.

Reinhardt, after an absence of many years, was in London in 1932, and in 1933, when the university conferred on him the Hon. D.C.L., produced *A Midsummer Night's Dream*

at Oxford, in 1934 he visited the United States and superintended some productions at Hollywood; he has been twice married, and has two sons.

REITH, SIR JOHN CHARLES WALSHAM, G.C.V.O., G.B.E. (1889–), was the seventh child of the Very Rev George Reith, D D, of Aberdeen and Glasgow, and an English mother. Starting life as an engineer, he served in the Royal Engineers during the World War, but was wounded and invalided out in Oct 1915; from 1916 to 1919 he worked in succession for the War Office, the Admiralty, and the Ministry of Munitions, giving ample proof of his natural genius for organization and administration In 1920 he became general manager of William Beardmore and Co, and two years later was selected from 55 applicants as first general manager of the British Broadcasting Co., Ltd Becoming managing director in 1923, in 1927 he was appointed director-general of the British Broadcasting Corporation, the company's successor, retiring from this post in 1938 to become chairman of Imperial Airways.

Sir John, who is married and has one son and one daughter, was knighted in 1927, created G.B.E. in 1934, and G C V O. on Jan. 1, 1939; he is an Hon. D C L of Oxford, and LL.D. of Manchester and Aberdeen Universities. (*See* Garry Allighan, *Sir John Reith* (S Paul, London, 1938))

RELIGION AND THE STATE. Relations between Church and State have been more strained in Germany than in any other part of the world during the year 1938. In August the Fulda Pastoral was signed by the Catholic episcopate and read from the pulpits of churches in all the German dioceses. It referred to the "incredible order" of the government expelling a bishop from his see. "The onslaught", declared this Pastoral, "has in no way relaxed, but is growing more fierce and bitter and naturally more effective". The official S.S. organ, replying to a complaint in the Pastoral of the Nazi criticisms of the Pope, justified these as "nothing more than a lawful reply to the poisonous insults which the Holy Father has levelled at the German people".

At the time of the *Anschluss* the Catholic bishops in Austria as a whole welcomed the Nazi invasion, but within a few weeks antagonism between Church and State was as acute as in the rest of Germany. After a sermon preached in October by Cardinal Innitzer, archbishop of Vienna, a Nazi crowd stormed the palace, demanding that the archbishop should be sent to a concentration camp. The following day Herr Bürckel publicly denounced him, stating that he had "close connexion with the Jews". From Oct. 13 all Church schools in Austria were closed.

Protestants in Germany have been mainly concerned with the imprisonment of Pastor Martin Niemöller. Dr. Niemöller had been under arrest since July 1937, and was brought to trial in February, charged with attacking the State and Party and inciting others to disregard State laws. He was sentenced to seven months' "honourable imprisonment" and a fine, and though his sentence was cancelled by his previous detention, he was immediately rearrested and put in "protective custody". Since then he has been placed in solitary confinement, and, according to latest reports, his health is being gradually undermined. One symptom of religious development in Germany is that prayers on his behalf have been offered in Catholic as well as in Lutheran churches. To what extent the resentment felt by Christians against Nazi repressive policy will become sufficiently mobilized to constitute a serious threat to the State is at present impossible to calculate. Certainly the recent tone of Nazi propaganda has been much more openly anti-Christian. No attempt is now made to disguise the fact that the claims of the totalitarian State are incompatible with Christian loyalties.

In Italy, Vatican policy aims at preserving the concordat between Church and State, but there are signs that this alliance is not altogether secure. In an address to the students of the College of Propaganda Fide in Rome, on July 29, the Pope insisted that "Catholic means universal, not racialist, not nationalist, not separatist" "One wonders", he continued, "why Italy has felt the need in an unfortunate spirit of imitation to copy the example of Germany". This utterance was immediately denounced in both the German and Italian press, and Mussolini himself replied in a public speech "The world had better know", he said, "that we shall go ahead with the racial problem To assert that Fascism has imitated anybody or anything is absurd".

The position of institutional religion under the régime of the Left reveals in many respects a marked contrast It is difficult to obtain reliable information as to ecclesiastical activities in Russia, but it is known that a considerable body of Orthodox opinion has apparently been able to accommodate itself to Soviet regulations. In Government Spain the religious position has changed considerably. A correspondent in the *Tablet*, the official Roman Catholic newspaper in England, recently stated (Oct. 15) that according to information he had received "no one need have any difficulty about attending Mass on Sundays or weekdays". There were then 3,000 priests in Barcelona. It is not without significance that on Oct. 17 a Catholic funeral, with full ceremonial, passed through the streets of Barcelona, and that the Foreign Minister, Señor del Vayo, walked bareheaded behind the hearse.

The fact that hostile pressure on the Churches has been coming from the Right rather than from the Left has not been without its effect on Christian opinion in Britain. English Churchmen had hitherto in general maintained that in the world-conflict on which we have entered, Christianity, as represented through the liberal democracies, would offer a third alternative, a middle course which was neither Right nor Left. This theory, however, has been immensely weakened by the crisis which was precipitated by the Czechoslovakian problem. It was shown that Britain and France must either ally themselves closely with Russia and pursue a League policy, or align themselves with the Right. They chose the latter course. This is not the context to discuss the morality or wisdom of that momentous decision: it is necessary only to record that it has already produced a Left-ward trend in English Christian thought. It is true that a large element of Christian progressive opinion in the Churches is pacifist and therefore comparatively out of sympathy with Left political policy: on the other hand there is a growing body of Christians within and without the Churches who hold that Socialism is the manifestation of the Christian force in the political field and that the Left standpoint is not merely compatible with but is an inescapable commitment of Christian professions. This movement is likely to have important results, not only as regards the relation of the Church to political parties, but as an influence producing a reformation and indeed a disruptive influence in Christian institutionalism. (K. I.)

RELIGIOUS COMMUNITIES. There are to-day, in the Roman Catholic Church, 92 Orders for men of the Western rite, representing 148,685 Religious, besides 17 Orders of the Eastern Uniate Rites in communion with

Rome. There are 73 Orders for women, but the number of Sisters is not available There are also fifteen Orders of women of the Eastern rite. Besides these, since the War there has grown up all over the world a large number of missionary and social service communities for women, some coming under the canonical term of Religious, others living together practising the counsels without vows These modern Sisters undertake all sorts of work which before was not open to nuns, maternity work, for example, being only recently authorized. There are over seventy such modern communities, representing thousands of Sisters Most of them work for their living, and their pooled resources are devoted to their charitable works.

(*See* Donald Attwater, *Orbis Catholicus*, 1938) (D. F. G.)

Anglican. In the Church of England there are now ten communities for men and more than fifty for women, with many more in the Episcopal Church in the United States, the Churches in the Dominions, and in the mission field. Among the most interesting developments are two communities of men and three of women, consisting entirely of South African Bantu.

A few have taken the rule, but not generally the name, of the old religious orders; but for the most part, whilst drawing on the old tradition, they have grown on their own lines, with a free adaptation to modern conditions. In the main, they are of the mixed type, devoted equally to the life of prayer and of work. Since the World War there has been a considerable movement towards the purely contemplative life, and there are now five enclosed communities of women.

The humanitarian works, when founded, were of a pioneer character—rescue homes, district nursing amongst the poor, nursing and convalescent homes, education in the undeveloped dominions overseas, and more recently the care of women alcoholics and drug addicts. The taking over of many of these activities by secular bodies will, it is hoped, enable the communities to undertake other social works for which there is at present no provision.

Slowly the communities won the approval of individual bishops; and there is now a collective recognition of the religious life by the English episcopate, in the official creation of an Advisory Council. Under the presidency of a diocesan bishop, it will consist of members nominated by the two archbishops and by the communities, to serve as advisers to the bishops, and to give guidance in the further developments of the religious life.

That men have not entered the religious life in the same numbers as women is partly due to the fact that bush brotherhoods, certain foreign missions, and other religious organizations in England have conditions of life which approximate to the poverty, celibacy, and obedience of the religious life, though without the vows. These organizations without doubt would, in the Middle Ages, have been regular communities. (R. H. T.)

RESINS, SYNTHETIC: *see* PLASTICS INDUSTRY.

RESTAURANTS: *see* HOTELS, RESTAURANTS, AND INNS.

RETAIL SALES. Retail food sales in Great Britain continued to increase in money value during 1938, but at a slower pace than in previous years. This was largely because retail food prices, after rising for several years, commenced in the autumn of 1938 to move downwards. The volume of food trade maintained during 1938 a modest rate of expansion similar to 1937.

The continuous expansion since 1932 in money sales of non-food merchandise was replaced in 1938 by a fractional decline; but this trend was by no means uniform. The decline in the relatively high-class trade of central and west end London, which began in 1937, was intensified in 1938, and spread to the popular trade of suburban London; it seems clear now that it is a product of a general economic recession Trade in provincial districts continued to expand during 1938, no doubt stimulated by the rearmament activity.

	1935	1936	1937	1938
FOOD				
Index of money sales (*a*)	111	120	130	135
Annual change % .	+ 7·4	+ 8 2	+ 8·8	+ 4·3
Retail price change % (*b*)	+ 2·5	+ 4 0	+ 6·9	+ 1·1
OTHER MERCHANDISE				
Index of money sales (*a*)	108	113	119	119
Annual change % .	+ 4·5	+ 4·9	+ 5 5	− 0 5
Retail price change % (*c*)	Nil	Nil	+ 4·5	+ 1 0

(*a*) *Bank of England Index number* (1933 = 100).
(*b*) *Ministry of Labour Cost of living index* (*food only*)
(*c*) *Approximate estimate only.*

Feb.–Oct inclusive 1938 change % on 1937	Money Sales			Retail prices approx.
	London	Rest of Gt Br.	Total Gt. Br.	
CLOTHING:				
Women's wear	− 2·0	+ 6·4	+ 2 9	+ 0·2
Boots and Shoes .	− 1·9	+ 3·3	+ 2·2	+ 2·9
Men's and Boys' wear . .	− 4·3	− 0 8	− 2·4	+ 1·5
HOUSE EQUIPMENT				
Furnishing .	− 10 0	− 1 1	− 4·9	Nil
Piece Goods	− 9·2	− 1·4	− 5·3	− 0·7
Hardware .	− 8·7	− 4·7	− 6·5	+ 4·7

Sales of household equipment, whose pace of expansion had dropped sharply in 1937, fell generally during 1938. Sales of clothing were, however, maintained, except in the case of men's wear. The rise of retail prices, which started at the beginning of 1937, was in the course of 1938 replaced by a slight decline. All categories of non-food merchandise except women's wear suffered a decline in volume sales during 1938, this being particularly severe in the case of hardware. (D. BA.)

In the United States the sales of all types of American retail stores in 1938 total an estimated volume of $35,718,933,000, a decrease of about 11·8 per cent from the 1937 sales total of $40,300,000,000. All types of stores suffered a decline in sales, but the food stores' sales and the sales of the stores in the general merchandise group held up somewhat better than the average.

The decline in department-store sales was 7½ per cent from their 1937 sales volume. The sharpest declines in sales were suffered by the stores selling furniture and major electrical household appliances, such as refrigerators.

The average price of merchandise sold in department stores in 1938 was about six per cent lower than the 1937 levels. The number of transactions, or units of sales, was about three per cent lower in 1938 than in 1937. Retail sales in department stores were retarded for a number of weeks during the autumn of 1938, by unseasonable weather.

The decline in department-store sales volume in 1938 served to increase overhead expenses, which will approximate 36 per cent of 1938 sales volume. Keen competition made it impossible for department stores to increase the merchandise margin or mark-up sufficiently to absorb the increase in overhead expenses. Wages increases in 1938 were another factor. Department-store earnings in 1938,

will not exceed, if indeed they reach, three per cent net profit on their yearly sales. At the end of the year, however, the number of transactions were running about even with the number of unit sales at the end of 1937.

The estimated 1938 sales, by all types of stores, follow:

Food stores	$8,824,600,000
General stores (with food)	1,123,062,000
General merchandise group	4,871,409,000
Apparel group	2,773,161,000
Automotive group	4,285,459,000
Filling stations	2,492,593,000
Furniture-household group	1,371,760,000
Lumber-building-hardware group	2,167,923,000
Eating and drinking places	2,828,585,000
Drug stores	1,398,182,000
Other retail stores	3,460,165,000
Second-hand stores	122,034,000
Total	$35,718,933,000

RÉUNION. The latest available statistics for this French colony are given below.

Area and Population:
Area 920 sq. miles.
Population (est. Dec. 31, 1936) 210,000
Chief Towns: St. Denis (cap., 26,800), St. Paul (22,679), St. Pierre (22,050).
Governor. M. Court.

Production 1937:	
Cane Sugar, refined	85,000 metric tons
Rum (export)	59,177 hectolitres
Overseas Trade 1937:	
Imports	139,041,000 francs
Exports	130,299,000 ,,
Communications 1937:	
Roads	456 miles
Railways	78 ,,
Finance 1938:	
Revenue, local (est.)	77,592,100 francs
Expenditure, ordinary (est.)	76,992,100 ,,
Expenditure, extraordinary (est.)	600,000 ,,

REUNION OF CHRISTENDOM. The continued suspense of active participation in the Reunion Movement on the part of the German Lutheran Church and the lack of contact with German Lutheran theologians of its leaders, has continued to impede Reunion activities. The more salient events of 1938, which was a quiet year, were:

(1) The Union of the Reformed Churches of France, that is, of the Reformed, the Reformed Evangelical, the Methodist, and the Evangelical Reformed Churches of France. This, after the synods of the four uniting churches had given approval, was declared at a conjoint assembly held at Lyons in April. It has been ratified by a further conjoint assembly in Paris on Dec. 12, and is to take effect on Jan. 1, 1939; see *Actes de l'Assemblé Constituante de l'Église Reformée de France*, Paris, 1938.

(2) An Agreement for the Œconomic Interconsecration of Bishops and for Œconomic Intercommunion between the Church of England and the Lutheran Churches of Estonia and of Latvia was reached by a delegation, led by the bishop of Gloucester and appointed by the English archbishops, which visited those countries in May. The terms of those agreements, which await ratification by the respective synodical authorities of the negotiating churches, are on the lines of a similar agreement made in 1936, and duly implemented by the Convocations of Canterbury and York, between the Lutheran Church of Finland and a similar Church of England delegation in 1936.

(3) The Methodist Episcopal Church of America has taken definite steps towards reunion with the non-episcopal Methodist churches of America.

(4) The Constitution for the proposed World Council of the Christian Churches, which in 1937 was approved in principle by the Oxford World Conference on Life and Work and the Edinburgh World Conference on Faith and Order, was revised and approved at Utrecht in May by a special committee of 28 members appointed by the two Conferences to make the revision and to carry through the proposal. The main feature of the revision is the requirement that churches taking part in the Council shall accept the trinitarian basis of the Faith and Order Movement. The revised Constitution having been approved, as had been required by the Edinburgh World Conference, at the meeting of the Faith and Order Continuation Committee at Clarens in August, the Committee of Twenty-eight arranged to address an encyclical letter in December to the churches participating in the two Conferences, inviting them to approve the Constitution and to co-operate in bringing the proposed World Council into being.

(5) A project for the setting up of a Council on the Christian Faith and the Common Life was approved by the Church of England Church Assembly at its summer session, and the two English archbishops were requested to take steps to bring it into being.

(6) The Outline of a Reunion scheme for the Church of England and the Evangelical English Free Churches has been issued in the name of those taking part in the conversations presided over at Lambeth by the archbishop of Canterbury between representative members of the Churches concerned. Its purpose, it is stated, is to indicate the possible lines of their approach to reunion and the difficulties in the way. (J. A. D.)

RHEUMATIC DISEASES. The importance of the rheumatic diseases, both acute and chronic, as one of the chief causes of invalidity among the working classes is coming to be more widely realized, not only among the English-speaking peoples, but also in South America and on the continent of Europe. In Scotland it has recently been estimated that fourteen per cent of the total invalidity of insured persons was due to rheumatic diseases in 1936, and obviously this is only a fraction of the total population. In the United States it has been stated that 3,000,000 out of a population of 127,000,000 are affected with chronic rheumatism, while nearly another million suffer with rheumatic heart disease.

That chronic rheumatic diseases are the outcome of several causes acting in combination is now generally recognized. Among these causes the inheritance of a type of constitution which provides a favourable soil for the germs of the disease takes an important place, but predisposing and contributory causes which are open to attack are of greater importance. Among these, bad housing, unhealthy working conditions, unduly long hours of work, especially in youth and early adult life, food of inferior quality and deficient in essential vitamins and mineral constituents, overstrain, anxiety, mental and physical shock, are of great importance and largely remediable; climate is another factor of importance, but in many cases this cannot be avoided. The influence of these contributory factors places serious difficulties in the way of research into the part played by microbes and their toxins, since they cannot be imitated under experimental conditions.

While the evidence incriminating the hæmolytic streptococcus appears to be gaining ground, there is little to be added to the account given in the *Ency. Brit. Book of the*

Year, 1938, of the position in this respect. The sulphanilamide group of drugs which have recently been found to have such a remarkable effect in the more acute and virulent infections with hæmolytic streptococci do not appear to have any such influence in the rheumatic diseases; this is disappointing and difficult to reconcile with the idea that these microbes have any specific influence in rheumatism.

There are many strains of hæmolytic streptococci, some highly virulent and others apparently innocuous to human beings. It would appear that the strains probably responsible in some degree at least for rheumatic manifestations are of low virulence, and their attack is rendered possible by such other ætiological factors as have been referred to above. There is also evidence that the body tissues may be rendered susceptible to the attack by the action of toxins slowly absorbed over long periods, which gradually break down the normal resistance, or to use the technical term, sensitize the tissues.

The problem of a virus playing a part is still under investigation, and though the evidence as yet is far from convincing, some very suggestive observations have recently been made, indicating the possibility of a virus acting in combination with a bacterial infection.

The question of the relationship between acute rheumatism or rheumatic fever and rheumatoid arthritis has been the subject of much research, and opinion is still divided. Some of the immunological characters of the two conditions were mentioned in the 1938 *Book of the Year*. Histological similarities in the nodules met with in rheumatic fever and in some cases of rheumatoid arthritis as well as in fibrositis have been adduced as an argument in favour of a common basis, but on the other hand differences, clinical as well as microscopical, exist which are opposed to this view, and the question must for the present be regarded as *sub judice*.

Treatment. Further experience is tending to establish the value of chrysotherapy—treatment by the salts of gold—in the treatment of rheumatoid arthritis, and also the drawbacks and contra-indications. The possible complications, their earliest signs, and the method by which they may be avoided or treated, have been exhaustively investigated. Among the most important of recent suggestions is that of Dr. Knud Secher, who advocates the use of large doses of certain vitamins as a safeguard against these complications

The diet appropriate to the treatment of rheumatic diseases has been the subject of investigation. The idea, still tenaciously held in many quarters, that red meat is to be avoided on the assumption that rheumatism and gout are essentially the same, has no justification in fact. Another error which is even more generally accepted, namely, that acid fruits are injurious, is also shown to be entirely unjustified; this idea has been responsible probably for a good deal of harm since fruit, especially in the raw state, is of great importance as a supply of essential vitamins. The importance of an ample supply of the vitamins A, B, C, and D, in the dietary of the rheumatic cannot be too strongly emphasized. Deficiency is common, especially in the diet of the poorer clasess. Vitamin B especially is commonly below the proper level, as there are not many foods containing it in any appreciable quantity; its deficiency plays a part in the production of some forms of neuritis and also tends to loss of appetite and defective action of the nerves and muscles of the stomach and bowels. Vitamin C is largely supplied by fresh fruit and vegetables, and is usually deficient in the blood of patients with rheumatism and rheumatoid arthritis. The importance of vitamins A and D lies in improving bodily resistance and aiding in the assimilation of calcium and phosphorus, both of which are of importance in rheumatism; they are chiefly supplied in milk, butter, and eggs, and their deficiency is readily made up by means of cod-liver oil.

The importance of rest in the treatment of the inflamed joints in arthritis is now admitted, and the damage done by the older idea that such joints must be kept moving lest they become stiff will be less frequently seen in future.

See *Annals Int. Med.*, 1938, xi, 1089–1247; *Reports on Chronic Rheum. Diseases*, 1939, iv, 1–11, 79–88, 106–49; *The Rheumatic Diseases*, 1939, i, No 1 (C. W B.)

RHODESIA, NORTHERN. The growth of the mining industry has resulted in the rapid industrialization of a primitive native people with few other resources for earning money. During 1938 the territory was visited by the labour adviser to the Colonial Office, who has recommended the establishment of a Labour Department and control of migration; at present 50,000 natives leave the territory annually to seek employment Within the territory the great copper mines of the Rhokana Corporation, the Roan Antelope, and the Mufulira and Nchanga Companies continue to develop and contribute largely to the finances of the territory; the standard of treatment of native employees is high, but relations between European and native employees present unsatisfactory features. Sir Alan Pim made an investigation of the finances of the territory in 1937–38, and has pointed out the need for the development of the social services, health and education in particular The Royal Commission, on closer union between the Rhodesias and Nyasaland, visited the territory in 1938 A section of the European community—and the majority of elected members of the legislative council—favour amalgamation with Southern Rhodesia. Considerable progress has been made in 1938 with the establishment of a system of indirect rule through native authorities. The Paramount Chief of Barotseland has accepted measures for the extension of the system to his area, but a satisfactory solution of the problems of welfare and self-government of natives in non-tribal and urban areas remains to be found.

A Rhodes-Livingstone Institute has been started at Livingstone to carry out anthropological investigations and as a centre of African studies. (J. L. K.)

Area and Population:

Area 290,323 sq. miles.
Population: native (est. Dec. 31, 1936), 1,378,000; European, 10,588; Asiatic and coloured, 946.
Chief Towns: Lusaka (capital), Livingstone, Ndola.



Fox Photos]
VICTORIA FALLS, RHODESIA. THE GORGE FROM THE BOTTOM OF PALM GROVE

Governor. Sir J. A. Maybin, K.C.M.G.

Production 1937 :

Copper	148,172 tons
Manganese	2,341 ,,
Gold	4,228 oz
Silver	86,861 ,,

Overseas Trade 1937 :

Imports, total	£4,086,842
Exports, domestic	£12,030,646

Communications (Dec. 31, 1937) :

Roads : trunk, 2,219 miles ; main, district, and branch, 5,924 miles

Railways · 622 miles.

Finance :

Revenue · (1937) £912,700 , (1938 est) £1,392,407

Expenditure . (1937) £910,700 , (1938 est) £1,392,359

Currency : Sterling , Southern Rhodesia, silver and copper.

Education, primary, 1937 :

Controlled schools (European), 18 , scholars, 1,168

African schools, 414 ; scholars, 30,021

RHODESIA, SOUTHERN. Since it was annexed by the Crown in 1923, the territory is self-governing, the Imperial government exercising supervision over native affairs through the High Commissioner for South Africa. During 1938, political interest has centred on the question of closer union between the Rhodesias and Nyasaland and on the visit of the Royal Commission under the chairmanship of Lord Bledisloe. Whether amalgamation will be an issue at the general election to be held in 1939 will depend on the date of the issue of the Commission's report. Following a policy of territorial separation of the European and native population, the government continues the reorganization of conditions in native areas, including the purchase of land for native occupation. The Act passed in 1937 to allow for the establishment of native customary courts with limited jurisdiction has now come into force, but the general system of native administration remains one of direct rule under Native Commissioners The government has found it necessary to deny that it has intentions to form a separate native state in the north in the event of amalgamation of the two Rhodesias.

The system of European education has been overhauled since the Fox Commission of 1936 ; the practical side of education is emphasized, and a technical school has been established at Bulawayo. Native education aims at improving living standards in the reserves ; the Government runs agricultural and teacher training schools at Tjolotjo and Domboshawa. Southern Rhodesia continues to enjoy a considerable measure of prosperity owing to the expansion of the gold industry and to the success of the tobacco crop. The mining laws encourage the individual worker, but the mainstay of the industry is a group of large mines producing about fifty per cent of the output

All citizens are liable for military service. The British South African Police form a permanent military force. There is a subsidy for training a reserve of air pilots, and Parliament has under consideration a comprehensive scheme for defence. (J. L. K.)

Area and Population :

Area 152,000 sq. miles.

Population 1937, 1,310,591 (Europeans 55,408 ; Natives 1,249,621 ; Asiatics and Coloured 5,367).

Chief Towns (pop. 1936 : E. = European). Salisbury, capital, 32,846, E. 11,392 ; Bulawayo 29,126, E. 12,321.

Governor. Sir H. J. Stanley, G.C.M.G.

Language. English.

Religion. Christian (European population).

Production 1936 (European only) :

Maize (1936)	188,700 metric tons
Tobacco (,,)	11,000 ,, ,,
Coal	1,029,000 ,, ,,
Asbestos	51,700 ,, ,,
Tungsten, pure	166 ,, ,,
Gold	25,014 kilogrammes
Pyrites	20,000 metric tons

Overseas Trade 1937 :

Imports £8,568,685 (private merchandise £8,299,070 ; Government stores £197,956 , specie £71,659)

Exports, domestic produce £10,700,442

Re-exports £1,278,542

Communications :

Roads, asphalted (Dec 31, 1937) 1,289 miles

Railways, open for traffic (1938) 1,355 ,,

Finance :

Revenue (est 1938–39) £3,320,000

Expenditure (est. 1938–39). £3,456,407

Public Debt (March 31, 1938) £12,373,000

Currency . sterling

Education, State and State aided :

European schools (1937) 79 ; scholars 10,750

Asiatic and coloured schools (1937) 10 , scholars 1,242.

Native schools (1937) 1,327 ; scholars (1935) 101,874.

Miscellaneous :

Motor vehicles licensed (Dec. 31, 1937) : cars 14,870 ; commercial 5,439 ; cycles 990.

Wireless receiving-set licences (Dec. 31, 1937) 6,467.

Telephones, subscribers (Dec. 31, 1937) 4,516.

RICE : *see* GRAIN CROPS.

RIFLE-SHOOTING. The international situation was reflected in the increased activity of service and civilian shooting during 1938 ; new clubs were formed, and membership expanded to unprecedented proportions, while at Bisley, where new targets of the " convertible " and " disappearing housemaid " variety made their appearance, attendances—except for those of the Coronation year—were a record. Here a new " Sniper " competition, to encourage the use of telescopic sights, was introduced, and an innovation at the Army Rifle Association's Central meeting was the firing of two competitions under gas conditions, the competitors wearing respirators. At the end of September Major C E. Etches resigned the secretaryship of the National Rifle Association, which he had held since 1921, and was succeeded by Maj.-Gen. Sir Alan Hunter.

The results of the principal events at the 75th annual meeting of the N.R.A., held at Bisley in July, were as follows : the King's Prize, which attracted 1,041 entries,



Sport & General]

BISLEY PUBLIC SCHOOLS' SHOOTING EIGHTS COMPETING FOR THE ASHBURTON SHIELD, JULY 7, 1938



Keystone]
CAPT. J. A. BARLOW BEING CARRIED FROM THE RANGES AT BISLEY, AFTER WINNING THE KING'S PRIZE, JULY 16, 1938

was won for the second time (previous win, 1934) by Capt. J. A. Barlow, of the West Yorks Regt.; Sgt E. S. M Wade, Oxford Univ. O.T.C., was second, and Aircrftmn T. W. Gregory, Royal Canadian Air Force, third. The Bronze medal went to 2nd Lt. Surridge, of a Territorial anti-aircraft battalion, and the Silver to P. D. Greig, late of the Winchester College O.T.C. The St George's Vase was won by E. Brookes with a score of 74 out of 75. For the Grand Aggregate there were 687 entries; C. Bunch (ex-R A.F.) and J. R. Reynolds (ex-R A.O C) tied for first place at 571, and after shooting off the tie the Trophy and Gold Cross went to Bunch. England won the Elcho Shield for the sixth year running; the United Service Challenge Cup went to the Royal Navy; and the Inter-Services XX match was won by the R.A.F. Canada won the Kolapore Cup; and the Mackinnon long-range match went to Great Britain. The National Challenge Trophy was won by England for the eighth successive year. Cambridge (834) beat Oxford (818) in their competition for the Humphreys Cup; they also won the Chancellor's Plate and the Heslop Cup, but the Inter-University went to London. For the Ashburton Shield eighty schools competed; it was won by King's College, Wimbledon (497) for the third time in seven years.

At the A.R.A. Central meeting Cpl. White (1st Bn. Rifle Brigade) repeated his 1937 success in winning the Roberts Cup, and Co. S.-M. Instructor P. Walbridge (Small Arms School Corps) won the King's medal for the best shot in the regular army at home, and other awards. The King's medal for the best shot in the Territorial Army, instituted 1935, went to Co. S.-M. F. J. Coles.

At the British Empire Games, held in Australia early in the year, the British team won the Empire Trophy—the principal event—with a record score of 3,260. L. E. Hoddle (Gt. Brit.) won the Canberra (300, 500, and 600 yds.), the first part of the Australian King's Prize, with a possible (105), the Prize itself going to V. Buttsworth (Queensland) with an aggregate of 347. At an international meeting held at Trentham, N.Z., South Africa won with an aggregate of 1,831 out of 2,000, New Zealand (1,803) and Great Britain (1,801) being second and third.

In the small-bore field the Pershing Trophy, put up in 1937 by the U.S.A., was won for the second time by Great Britain; but Britain lost the Dewar Cup, won in 1937 after a lapse of many years, to the States, who made a record score of 7,953 out of 8,000.

RIO DE ORO AND ADRAR: *see* SPANISH WEST AFRICA.

RIO MUNI: *see* SPANISH WEST AFRICA.

"RITA": *see* HUMPHREYS, MRS. W. DESMOND.

ROADS AND HIGHWAYS. In Great Britain the Minister of Transport, who in 1937 became responsible for trunk roads of a total length of 4,500 miles, announced in Nov 1938 that a reconnaissance survey had been completed covering the entire mileage. In the course of this survey very successful use was made of aerial photography. The speed with which road improvements can be initiated is conditioned by the somewhat deliberate procedure which English law imposes upon public authorities intending to acquire land. On a scheme costing £50,000 or more, land acquisition may take anything from one to two years.

At the Building Research Station much attention has been devoted during the past year to the development of the "vibration method" as a means of increasing the density of concrete by bringing the air bubbles to the surface, a subject of great interest to road engineers. Another modern branch of study which closely concerns the road engineer, is that of "soil mechanics", the aim of which is to enable reliable forecasts to be made of the behaviour of various kinds of subsoil under different conditions of loading and weather. A sixteen-wheeled machine known as a "profilometer" is now in use to measure the riding qualities of various road-surfaces.

Europe. Although several parties of English engineers and administrators have visited the German *Autobahnen* during the year 1938 and have commented very favourably thereon, there is considerable reluctance to introduce this novelty into Great Britain, where circumstances are thought to differ widely from those in Germany. The German government continues to extend the network of *Autobahnen* which is likely, before long, to traverse Austria and Czechoslovakia.

A permanent international commission has been established to study the creation of a serviceable transcontinental highway, London–Istanbul. At the last meeting of the commission, held at Budapest, a British chairman was elected; it is hoped that it may soon be possible to make



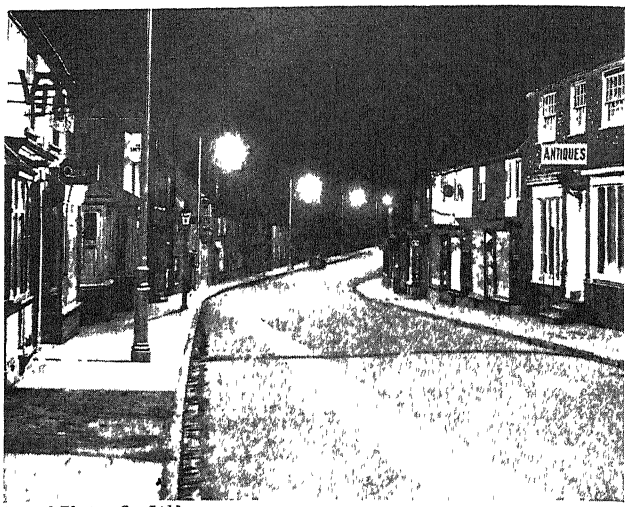
American Society of Planning Officials]
HENRY HUDSON PARKWAY, NEW YORK

a complete reconnaissance of the more difficult sections through Yugoslavia, Bulgaria, and Turkey

At the International Road Congress held at The Hague in 1938, experts from a score of countries discussed a wide range of topics relative to road-making materials and road accidents—particular stress being laid upon the need for a uniform international basis for accident statistics.

North America. In Dec. 1938, the legislature of British Columbia voted 25,000 dollars for a preliminary survey of the proposed "Alaska Highway", extending from the Washington State border to Fairbanks in Alaska, a scheme of continental importance, demanding the friendly collaboration of the United States and Canada. In New York and other great cities, much energy is being devoted to the improvement of exits, so as to accelerate traffic flow across the widespreading suburban fringes. An expenditure of more than a million dollars is to be incurred by the Port of New York Authority in the formation of the New Jersey Approach to the Lincoln Tunnel. This project includes a three-level traffic interchange at the Hudson County Boulevard intersections, as well as two bridges across the main approach. A scheme is being designed by the New York State Department of Public Works for the building of a super highway from Albany to Buffalo at a cost of upwards of 100 million dollars. It is contemplated that the highway should be at least 300 ft. wide and accommodate not less than six lanes of vehicles. Cincinnati is completing its new Columbia parkway skirting the Ohio river for about seven miles and involving a variety of viaducts, half-viaducts, retaining walls, etc. The width of the carriageway is 56ft.

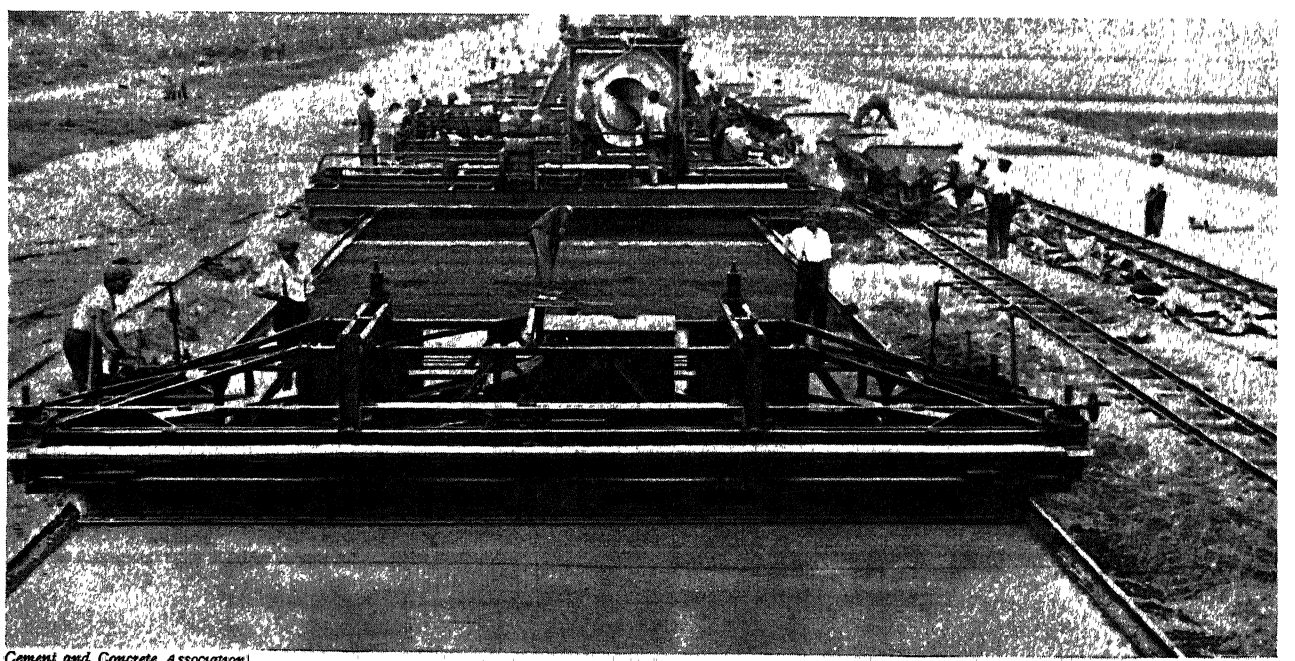
Accidents on Highways. The disturbed state of international relations and the consequent heavy expenditure upon rearmament have created an atmosphere unfavourable to the carrying out of any public works that are not directly related to national defence. The progress of major schemes of road improvement in Great Britain is likely, therefore, to be retarded, although the number of vehicles on the road continues its uninterrupted rise. The number of new registrations of mechanically propelled vehicles for every day in 1937 was 1,293, but fortunately this increase was accompanied by a decrease in road casualties. For the



General Electric Co. Ltd.]

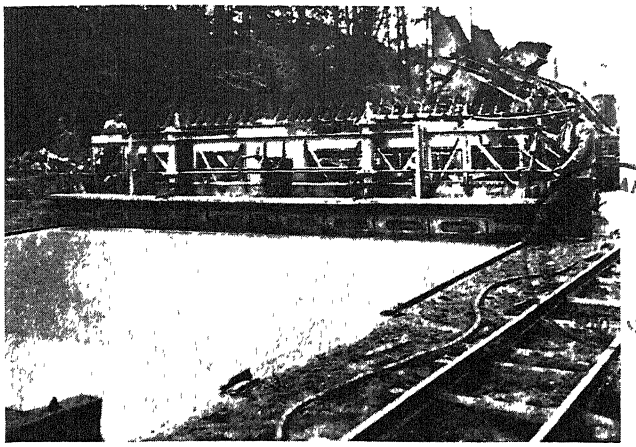
DUNSTABLE, BEDFORDSHIRE STREET LIGHTING WITH MERCURY VAPOUR ELECTRIC DISCHARGE LAMPS

first ten months of the year 1938, the number of deaths was 140 less than in the corresponding period of the previous year, and of injuries, 2,235 less. It can accordingly be claimed that some success has attended the efforts to secure greater safety on the highway. There is, however, no room for complacency, and if present circumstances are unpropitious for embarking upon great programmes of road works, attention can profitably be directed to raising the standard of conduct on the roads. Herein lies the greatest hope for the future. Road improvements do not necessarily lead to a reduction in accidents. Straight highways with good visibility are not by any means exempt from casualties. In the United States of America four out of five accidents occur on dry roads, in clear weather, while the car is travelling straight ahead. In Poland, according to police statistics, barely twenty per cent of the road accidents occur on bends of roads, and eighty per cent on straight stretches of road. A consensus of 26 State accident summaries for 1936 in the United States of America shows the seven most important improper acts to be: (1) Exceeding the speed

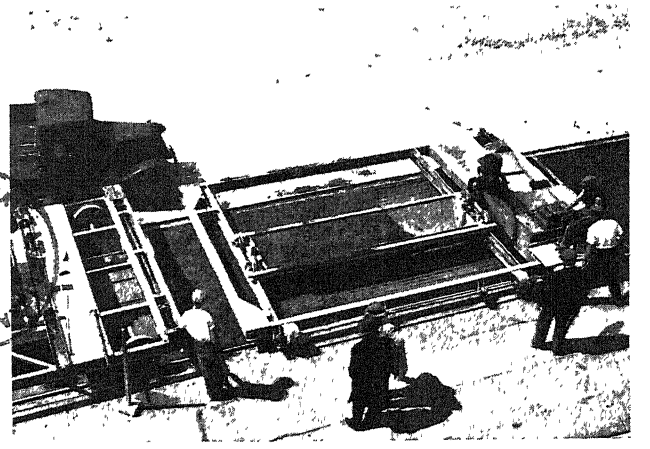


Cement and Concrete Association]

VIEW OF LAYOUT OF PLANT ON A GERMAN MOTORWAY



Cement and Concrete Association]
REAR VIEW OF HAMMER TAMPING MACHINE ON A GERMAN MOTORWAY



Cement and Concrete Association]
VIBRATOR AND DISTRIBUTOR MACHINE ON THE CATERHAM BY-PASS IN SURREY

limit or driving too fast for conditions. (2) Driving on the wrong side of the road. (3) Disregarding " stop " signs or signals. (4) Improperly failing to yield the " right of way " at intersections. (5) Attempting to force entrance between moving vehicles to avoid collision with an oncoming vehicle. (6) Attempting to pass on a curve or hill a vehicle moving in the same direction. (7) Failing to signal intention to stop or turn.

How much can be effected by inculcating the code of conduct is shown by the success attained in England by the Chief Constable of Lancashire. He employed a large force of mobile police, increased the number of precautions, diminished the number of prosecutions, and promoted good conduct by every means in his power, with the result that for the six months ended Sept. 30, 1938, when the average reduction in accidents for the whole country was five per cent, in Lancashire it was 46 per cent. By a concentration of effort on one road where accidents were very rife, the Chief Constable reduced the number by 73 per cent.

Another illustration of modern safeguarding procedure may be quoted from Illinois, where on U.S. Highway 40, signs are installed on every curve indicating the speed of safe travel under normal conditions. As a result of expert " speed surveys " the use of similar signs may be extended to other highways in the State, so that motorists may have no excuse for taking risks when negotiating bends. In various London suburbs an attempt is being made to promote the safety of pedestrians by constructing footbridges across arterial roads. In the neighbourhood of schools and playing-fields, subways are being built under busy thoroughfares for the protection of children. A novel type of elevated roundabout is being constructed at Caterham in Surrey, so designed that vehicles circulate at the upper level round a sunk garden, to which pedestrians gain access by easy slopes from the footways of all the converging roads and thus avoid the risk of crossing the carriageways.

Obstructions on Highways. In built-up areas, where road widenings are prohibitively costly, relief of traffic congestion must be sought in the removal of obstructions, among which trams figure prominently owing to their inflexibility. Fortunately the London Passenger Transport Board have been able, during the year ended June 30, 1938, to convert 46 route miles of tramway to trolley-bus operation. More than half the total original route-mileage of trams is now worked by trolley-buses. On some congested routes, this elimination of trams may well lead to a fifteen per cent increase in traffic speed. Another prolific cause of delay is the parking of private cars in busy thoroughfares. Remedies are easier to prescribe than to apply in densely populated areas, where land for open-air garages is excessively costly. It is difficult to park more than 200–250 cars to the acre at ground level The erection of new buildings gives opportunity for the provision on the premises of parking accommodation for visitors or customers. This plan is being adopted at the new Church House, Westminster, where a garage will be formed under the great assembly hall. Proposals have been broached for utilizing the space under London squares and public gardens as garage accommodation ; but owing to the high cost of construction, the objection of residents, and various legal and statutory complications, little progress can be recorded. Advocates of subterranean garages argue that structures of this kind might be so designed as to be used as air-raid shelters. The multi-storey car park, as installed in Chicago, with access by lifts or ramps, provides an ingenious but expensive means of utilizing to the best advantage a limited superficial area of land.

Greater London. In May 1938 was published the Report on the Highway Development Survey of Greater London, the result of three years' study by Sir Charles Bressey and Sir Edwin Lutyens under the ægis of the Minister of Transport, who gave instructions that an attempt should be made to forecast London's traffic needs for thirty years ahead. The Minister, in commending the Report to the numerous highway authorities concerned, stated that they could count upon the whole-hearted support of his department. The approximate mileage of new or improved routes recommended in the Report is as follows :

	Miles
Within London County Council area	123
Outside London County Council area (motorways excluded)	388
Motorways	307
Total	818

The total cost of the schemes might lie between £160 millions and £230 millions. The Report lays stress on the urgent need for protecting the course of the proposed routes from encroachment and obstruction, even if the actual work of construction has to be postponed. In the event of a trade recession's occurring, it would then become possible to set work afoot promptly for the relief of unemployment without incurring the difficulties and delays that usually attend the promotion of such schemes. Meanwhile, the

ancient road system of Inner London is increasingly overstrained by the traffic tides surging along the modern arterial roads which have been built on the outskirts of the metropolis. If a circle of ten miles radius is drawn from Charing Cross, it will cut thirteen arterial roads constructed during the past nineteen years The aggregate width of these thirteen highways is about 1,400 ft , affording accommodation, eventually, for about 52 lanes of moving vehicles. The London-bound traveller finds few, if any, corresponding thoroughfares when he enters the circle of five miles' radius from Charing Cross. Indeed, generally speaking, the arterial roads discharge at their London end into streets of little more than half the width of the new routes. Moreover, this restricted width is usually encumbered by shopping centres and trams, which reduce severely the carrying capacity of the thoroughfare.

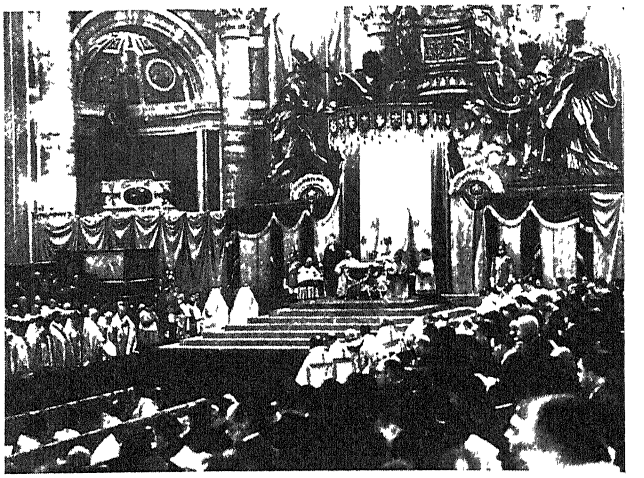
BIBLIOGRAPHY. *Report on the Administration of the Road Fund for the Year* 1937–38 ; Sir Charles Bressey, Sir Edwin Lutyens *Highway Development Survey*, 1937 (*Greater London*) ; *Eighth Annual Report, Experimental Work on Highways* (*Technical*) *Committee ;* H. Alker Tripp, *Road Traffic and its Control ;* Collins and Hart, *Principles of Road Engineering* ; *Report, Eighth Congress of International Association of Road Congresses* (held at The Hague). (C. H. BR)

ROMAN CATHOLIC CHURCH. Of the traditional and canonical number of seventy cardinals, there were at the beginning of 1938 69 ; six died during the year, and the ratio is now 35 Italians, engaged mostly in the Vatican service, and 28 cardinals of other nationalities.

At present there are 1,695 ecclesiastical jurisdictions in the Church. Of these fourteen are patriarchates, 1,194 archbishoprics and bishoprics, 487 vicariates and prefectures. In the United States there exist nineteen archbishoprics, three of which are governed by cardinals (Boston, Chicago, Philadelphia), 94 bishoprics, and two vicariates. Louisville, Ky., and Newark, N.J , were raised to archdioceses, and Owensboro, Ky., Saginaw, Mich., Patterson and Camden, N.J., were named as new dioceses. In England and Wales there are four archbishoprics, including the cardinalitial see (Westminster), and fourteen bishoprics. Scotland has two archdioceses and four dioceses. Ireland has one cardinalitial archdiocese (Armagh) three other archdioceses, and 25 dioceses. Canada has one cardinalitial archbishopric (Quebec), eleven archbishoprics, 28 bishoprics, seven vicariates

The latest available figures show that the Universal Catholic Church has approximately 375,475,000 adherents, mostly of the Roman Rite, but including millions belonging to the Greek and many Oriental Rites under the jurisdiction of the Pope. The total Catholic population of the United States is 21,451,460, an increase during the year of 492,326. Canada numbers 4,285,288 Catholics. In the two American continents, there are, approximately, 136 millions. In England and Wales, the Catholic population showed an increase of 13,693, bringing the number of the faithful up to 2,375,196. Ireland has about 3,204,000, and Scotland 614,021. It is reliably estimated that Catholics in the English-speaking world number about 50 millions.

In its position as a Temporal State, the Vatican has attached to it Ambassadors or Ministers from 37 nations. It is represented, either officially or unofficially, by Nuncios or Apostolic Delegates, in 62 countries. One of the most notable appointments of the year was that of Mgr. William Godfrey, on Nov. 21, as Apostolic Delegate to Great Britain. Diplomatic relations between the Holy See and Nationalist Spain were formally established on May 16,



Keystone]

POPE PIUS XI PERFORMING THE CEREMONY OF CANONIZATION OF THREE NEW SAINTS AT ST. PETER'S, ROME, APRIL 23, 1938

when Mgr. Gaetano Giognani, brother of the Apostolic Delegate to the United States, was named Papal Nuncio to the Franco government. On June 30, Don José Yanguas Messia presented his credentials as Ambassador of the Spanish Nationalist government to the Vatican. The post of Nuncio to the Spanish Republican government was not filled.

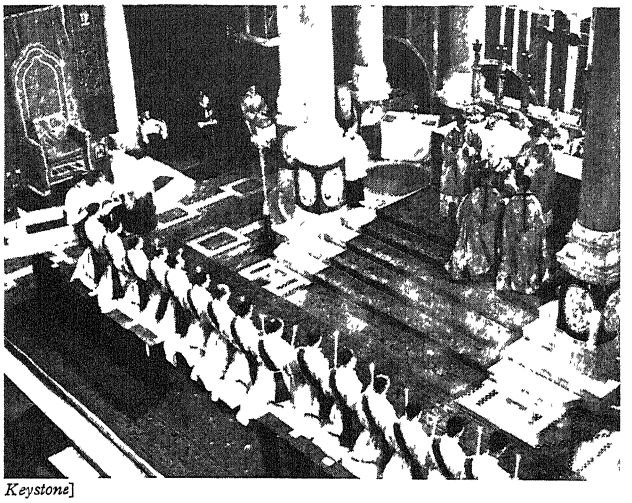
Roman Curia. This governing body of the Church, under the supreme jurisdiction of the Pope, is composed of twelve Congregations which deal legislatively and executively with all ecclesiastical matters, of three tribunals which are judicial, and of five offices which transact the ordinary and extraordinary business.

Particular interest attaches to the decisions of the Congregation of the Holy Office in regard to the Index of Forbidden Books. A newly revised index was issued in April. During 1938, the following works were put on the index : eight books by the Frenchman, Alfred Loisy ; three by the Italian, Aloysia Piccareta ; two German treatises by Raoul Francé and Gustav Mensching respectively ; and a New Testament dissertation by O. Lemairé.

Curiosity is also shown about the decisions of the Tribunal of the Sacred Roman Rota. Definitive decisions were made in 1938 on eighty matrimonial cases. Of the 74 appeals made for a declaration of nullity, the decree of annulment was granted to thirty.

Notable Events. During the last week of May, nineteen cardinals, about 300 bishops and archbishops, and upwards of 400,000 clerical and lay pilgrims, from forty nations, assembled at Budapest for the 34th International Eucharistic Congress. Hundreds of thousands gathered in June for the First National Eucharistic Congress of Canada, held at Quebec, and for the Eighth National Eucharistic Congress of the United States in October, at New Orleans. Of memorable significance was the ovation tendered to Cardinal Hinsley, Archbishop of Westminster, by all sections of the populace, when he returned to London in January, after having received the cardinalate in Rome in December. The 150th anniversary of the first Catholic settlement in Australia was celebrated by Federal and Church officials in February. The 100th anniversary of the founding of the Church in New Zealand was likewise raised to a national function in January.

The Church in Conflict. The attack by the government against the Catholic Church in Germany was intensified. Vilification of priests and religious continued, in the press, and by direct action. Mobs assailed the residence of Cardinal von Faulhaber, and Bishop Sproll, of Rottenburg,



Keystone]
THE ORDINATION OF 17 PRIESTS AT WESTMINSTER CATHEDRAL, LONDON, MAY 11, 1938

was expelled from his diocese. The authorities suppressed religious news, such as the Pope's allocution at Christmas, proceedings at the Budapest Eucharistic Congress, the bishops' pastorals, etc. Ninety-five per cent of the Youth Organizations, permitted according to the Concordat with Germany, were disbanded. Educational establishments, of all degrees, were systematically destroyed by the prevention of pupils' attending them. In a comprehensive way, affecting every phase of the religious life, the youth were drawn away from the Church to the State.

By a paradox, however, Catholic life in Germany was vivified. Attendance at services and reception of the Sacraments increased. The Hierarchy continued throughout the year to protest against the aggression; and Pope Pius XI, who continued regularly to condemn the Nazi violations of the Concordat, assailed in October the vicious misrepresentations that the German and Austrian Church was engaging itself in political affairs.

The martyrdom of the Austrian Church began after the *Anschluss* in March. Under promise that the rights of the Church would be respected, the Austrian Hierarchy under Cardinal Innitzer accepted the union of Austria with the German Reich. Immediately, however, the Concordat of 1933 was violated, and restrictive and persecutory measures were applied against the Church and its organizations. Cardinal Innitzer, in October, was attacked in his residence and put under protective guard. Nazi decrees on marriage, ethical matters, and education widened the gap between the State and Church throughout Greater Germany.

In Mexico, though the legal restrictions on the Church and education were still in force, a modification in their application was noted. A notable occurrence was the first ordination at the Seminary of Montezuma, New Mexico, erected by the American Hierarchy. Thirty-one young priests returned to Mexico for life or death.

The period of bloody persecution, apparently, had spent itself in Republican Spain. On the contrary, the Negrín government issued reassurances that a large measure of freedom and toleration would be given the Church in Republican territory.

Missions. During 1938 there was tremendous effort in the missionary fields of all the continents, and satisfactory extension and success. The latest authentic statistics show the following grand totals of persons engaged in Catholic missions: foreign priests, 10,285; indigenous (native) priests, 6,255; foreign religious brothers, 4,650; native members of male religious congregations, 2,145; foreign religious sisters, 18,299; native religious sisters, 18,517, catechists, 74,169; other native teachers, 61,665 Intensive efforts are being made to build up the native clergy in all the mission countries The number of natives baptized and tended in these missions is 16,921,624; number of catechumens is estimated at 2,611,942. There are 9,408 major churches, and 45,714 smaller places of worship.

The present trend is that of spreading institutional developments The available figures reveal: number of elementary mission schools, 33,087; elementary pupils, 1,876,959; secondary schools, 3,365; pupils, 329,835. These are staffed by the graduates of native seminaries and novitiates, training schools for teachers and catechists. At present there are maintained 670 hospitals, 2,773 dispensaries, 108 leper homes, 1,885 orphanages and 410 homes for the aged. The support for the missions is obtained through the diocesan and national Societies for the Propagation of the Faith in the various countries, and distribution is made through co-operation with the Superior Council established in Rome. (F. X. T.)

(*See* also PIUS XI; VATICAN)

ROME. The work of excavation and restoration of the remains of imperial and post-classical Rome goes on unchecked. During 1938 it was decided that the whole of the Thermæ of Diocletian should be uncovered, and the buildings masking them demolished. The archæological event of the year was the inauguration, by Signor Mussolini, in September, on the 2,000th anniversary of the birth of Augustus, of the re-erected Ara Pacis in the Campus Martius, beside the tomb of Augustus, between the Corso Umberto and the Tiber. Herr Hitler's visit to the city in May was the occasion for scenes of unparalleled enthusiasm. An obelisk in memory of the Italians who have fallen in the Spanish



Sport & General]
CORPUS CHRISTI CELEBRATIONS IN ROME. THE FLORAL CARPET IN THE VIALE DI GENZANO, MAY 18, 1938



P. Popper]

VIEW OF ROME FROM MONTE MARIO

civil war has been erected at the Campo Mussolini. November saw the opening of the new short-wave broadcasting station, the " Imperial Radio Centre ", at Prato Smeraldo, five miles south of the city, which Italy claims to be the most powerful and best equipped in the world, and the beginning of electrical working of the Rome–Viareggio railway. The government decided in June to take measures for the suppression of the familiar street shoeblacks, said to occupy 500 pitches in various parts of Rome. *See* also VATICAN.

RONALD, SIR LANDON, British musical conductor and composer, was born on June 7, 1873, and died in London on Aug. 14, 1938. His father was Henry Russell, the composer and singer of such popular songs as " Cheer, boys, cheer " and " A life on the ocean wave ". After studying at the Royal College of Music, Ronald began his career as pianoforte soloist in *L'Enfant Prodigue* in 1891, in which year he was engaged as assistant conductor at Covent Garden. His distinguished career as conductor of the New Symphony Orchestra began in 1908, when it was known as the Royal Albert Hall Orchestra. In 1910 he became principal of the Guildhall School of Music. He was knighted in 1922. None of his many other compositions attained the popularity of his song " Down in the forest something stirred ". In 1922 he published *Variations on a Personal Theme,* and in 1931 *Myself and Others.*

ROOSEVELT, FRANKLIN DELANO (1882–), American statesman, president of the United States. A biography of him may be found in the *Ency. Brit.*, vol. 19, p. 535. Mr. Roosevelt gave a clear indication of his attitude towards national and international problems when, on Jan. 3, 1938, in his annual message to Congress, after referring to a " world of high tension and disorder . . . where stable civilization is actually threatened ", he made a plea for co-operation between government and business. This plea he followed up on Jan. 11 in a conference at the White House with a group of industrial and business leaders.

On July 7 the President left Washington for a Western tour, calling on voters to elect democratic liberals in the primary elections and defeat candidates who had failed to support important New Deal measures. The enthusiasm with which he was greeted during this tour showed that his personal popularity had undergone no substantial decline since 1937.

Extending his tour to Canada, Mr. Roosevelt on Aug. 18 visited Kingston, Ontario, where he received the degree of Doctor of Laws at the Queen's University. Following this ceremony, he joined with Mr. Mackenzie King in the opening of the new Thousand Islands Bridge crossing the St. Lawrence from Ivy Lea in Canada to Collins Landing in New York State, and in a speech made on this occasion he declared that the United States would " not stand idly by " if Canada were attacked by a foreign power.

On Sept 26, when the Czechoslovak crisis was at its height, Mr. Roosevelt cabled an appeal for an amicable settlement to Herr Hitler and Dr Beneš, sending copies of the cable to the premiers of Great Britain, France, Poland, and Hungary. This was followed on Sept. 28 by a second, more forcibly worded, appeal addressed to Herr Hitler

On Nov 14 the President gave practical expression to American reactions towards the violent outbreak of anti-Semitism in Germany, when he caused the U.S Ambassador in Berlin, Mr Hugh Wilson, to be recalled to Washington for " consultation." His speeches in the latter part of the year made perfectly clear his detestation of totalitarian forms of government; and on Dec 24, in a Christmas Eve address, he renewed his promise to make every endeavour for peace.

On June 18 Mr Roosevelt attended the wedding of his son, John, at Nahant, Mass., to Miss Anne Lindsay Clark.

ROOT CROPS. Apart from sugar and potatoes, the acreage under root crops has been declining steadily in Great Britain for many years. They require a great deal of manual labour in proportion to their value; and since wages have risen, these crops, in particular turnips and swedes, have become less profitable to grow. The following table shows the trend in recent years.

Great Britain

	Acreage 000 acres	Yield per acre tons	Production 000 tons
Turnips and Swedes			
1927–36	962	13·2	12·755
1937	767	13·3	10·161
1938	743	14·5	10·605
Mangolds:			
1927–36	268	18·5	4·964
1937	209	17·9	3·749
1938	217	17·0	3·689
Potatoes:			
1927–36	622	6·6	4·094
1937	591	6·9	4·048
1938	610	7·2	4·404

Yields per acre of turnips and potatoes are usually substantially higher in Scotland than in England and Wales. As a result of the heavy potato crop, prices (King Edward VII, 1st quality) fell from 7*s.* per cwt. in December 1937 to 5*s.* 6*d.* per cwt. in December 1938. The Potato Board continues to control the volume of supplies by means of (*a*) riddle regulations prohibiting the sale of potatoes below a certain size; (*b*) by the fine of £5 per acre for increased acreage, and (*c*) by licensing importers. (*See* MARKETING BOARDS.)

On the continent of Europe potato production has increased considerably in recent years from an average of 133 million tons (metric) in 1927–31 to an average of 149 million tons in 1935–37. Germany in particular has established new factories for the production of potato flour and also of potato flakes which are now widely used in stock feeding. The 1938 crop though good was not quite up to the record harvest of 1937. In most European countries the area under roots has of recent years shown no tendency

to increase in proportion to the increase in the cattle populations To some extent Kohl Rabi has been substituted for the traditional turnips and mangolds ; to some extent green-fodder crops are being grown instead of root crops in order to economize labour. (P L. Y.)

ROTARY INTERNATIONAL. Between Jan. 1 and Dec. 31, 1938, the total membership in the Rotary Clubs in approximately eighty geographical divisions of the world grew from 193,000 to 203,000, while the number of clubs increased from 4,484 to 4,807. During the year, Rotary extended to Syria, Anglo-Egyptian Sudan, Cyprus, and the Hatay. The president for 1938–39 (term ending June 30, 1939) is George C. Hager, of Chicago.

The international secretariat (central office in Chicago) serves as a clearing-house for the reception, analysis, and dissemination of Rotary information and ideology. Other offices of the secretariat are at Zürich, Singapore, and London.

Rotary activities during 1938 included regional conferences at Penang (Malaya), Blackpool (England), and Stockholm (Sweden), and an international convention at San Francisco, Calif International service activities included institutes of international understanding, exchange of students, inter-country committees, special club programmes on international matters, etc.

Rotary International publishes *The Rotarian* in English and *Revista Rotaria* in Spanish. Twenty-eight regional magazines are published in 16 languages.

ROWING. The University Boat Race, rowed on April 2, was won by Oxford, with a better crew than that with which they broke the long series of Cambridge victories in 1937. Of the 1937 crew, R. R. Stewart, J. P. Burrough, with the stroke, A. B. Hodgson, and the coxswain, G. J. P. Merifield, were available to help J. C. Cherry, the president, to form his crew. Practice followed a normal course, and the crew improved so fast in the last ten days that they started in the race at their best. Mr. F. H. Page, Dr. Pat Mallam, and Mr. G. O. Nickalls undertook the coaching. At Cambridge things did not proceed quite so smoothly. M. P. Lonnon, the president of 1937, was re-elected in May, but did not come up in the October term. T. B. Langton was elected in his place, and he and Alan Burrough, together with the coxswain, G. J. P. Hunter, were the only old Blues available. The seat at stroke was given to D. S. M. Eadie of First Trinity. Cambridge had in G. G. Keppel, of Princeton, U.S.A., an oarsman of great weight and magnificent physique, who had great experience and a winning tradition in the States ; but he was given hardly sufficient time during the stroke to do himself justice. Mr. D. H. McGowen, Mr. Claud Wise, Mr. Derek Mays-Smith, and Mr. R. H. H. Symonds coached the crew.

The race was one of the most exciting ever seen. On the morning of the race it was obvious that the winning of the toss would have a great deal to do with the result. A good spring tide was making, but it was met by a strong west wind with a touch of north in it, which is quite the worst on the course. This meant rough water for the first half-mile, again through Hammersmith Bridge to the Eyot, with the worst of all through Barnes Bridge. Oxford lost the toss, and Cambridge took Surrey, the station with the better shelter everywhere, save just through Barnes Bridge. Although Hodgson was clear at the mile (4 min. 18 sec.) he did not dare to make a big effort to take the Cambridge station, as his boat was full of water. Eadie spurted up and had reduced Oxford's lead at Hammersmith to half a length in 7 min. 34 sec. With Oxford outside and in the rougher water, Cambridge drew level and had a canvas length's lead at the Oil Mills. Up the Eyot the water was better, and though Eadie contested every stroke, Oxford had passed them and gained a third of a length at Chiswick Steps in 12 min. 20 sec. Cambridge made a last despairing effort on their last corner, and then the race was over, Oxford being clear before Barnes Bridge and winning by two lengths in 20 min. 30 sec. at 33, with their opponents finishing at 40.



Fox Photos]

OXFORD *v.* CAMBRIDGE BOAT RACE, APRIL 2, 1938. OXFORD LEADING AT HAMMERSMITH BRIDGE

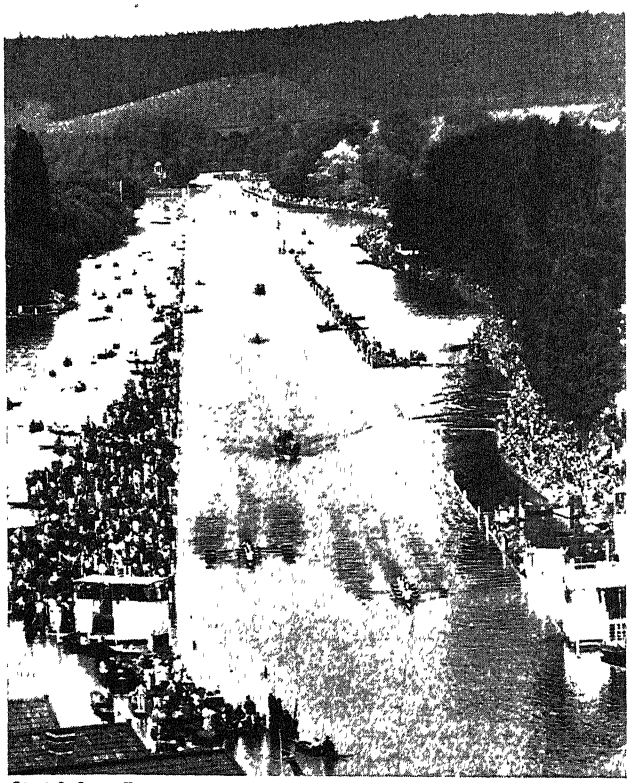
The names and weights of the crews were :

	OXFORD	st.	lb.
	J. L. Garton (Eton and Magdalen), bow	11	10
2.	H. M. Young (Westminster and Trinity)	13	0
*3.	R. R. Stewart (Eton and Magdalen)	12	13
4.	H. A. W. Forbes (St. Paul's and Magdalen)	13	1
*5.	J. P. Burrough (St. Edwards and St. Ed. Hall)	13	7½
6.	F. A. L. Waldron (Shrewsbury and Trinity)	13	10
*7.	J. C. Cherry (Westminster and B.N.C.)	13	12½
*	A. B. Hodgson (Eton and Oriel), stroke	12	0
*	G. J. P. Merifield (King Edward and St. Ed. Hall), cox	7	13
	Total weight (excluding cox)	103	12
	Average weight	12	13¾

	CAMBRIDGE	st.	lb.
	B. T. Coulton (Dulwich and Jesus), bow	10	13
2.	A. M. Turner (Cranleigh and Corpus)	11	12
*3.	A. Burrough (St. Paul's and Jesus)	12	7
*4.	T. B. Langton (Radley and Jesus)	13	10½
5.	J. L. L. Savill (Radley and Jesus)	12	13
6.	G. Keppel (Princeton, U.S.A., and Trin. Hall)	13	6
7.	A. Campbell (Barrow G. S. and Selwyn)	12	4
	D. S. M. Eadie (Oundle and 1st Trinity), stroke	12	1
*	T. H. Hunter (Harvard and Trin. Hall), cox	8	4
	Total weight (excluding cox)	99	10½
	Average weight	12	6½

* Old Blues.

Both Clubs brought spare crews with them to Putney, Isis for Oxford and Goldie for Cambridge, and they raced in the Head of the River race a week before the Boat Race,



Sport & General]
HENLEY, 1938. LONDON ROWING CLUB BEATING TRINITY HALL, CAMBRIDGE, IN THE FINAL OF THE GRAND CHALLENGE CUP

Goldie winning the event and Isis being second, returning a time three seconds slower, ten seconds ahead of Thames R.C. I.

At Oxford in the Summer Eights Trinity produced a very fine crew, and went Head for the first time for seventy-four years, bumping New College on the last night and making five bumps in all. At Cambridge, Jesus retained the Headship in the Mays for the fourth successive year.

There were no foreign entries for the Grand Challenge Cup at Henley Regatta, but there were eight English entries. The most thrilling race was that in which London R.C., who had had to reorganize their crew in the last week's practice owing to a motor-car accident, beat Jesus College, Cambridge, who rowed their " Mays " crew, by only three feet in 6 min. 52 sec. Trinity Hall proved to be no match for London in the final, the latter winning by 1½ lengths in 6 min. 58 sec.

Radley sent a splendid crew for the Ladies Plate, and won it for the first time. Their time in the final, 6 min. 56 sec., was faster than that in the Grand, but it is only fair to say that conditions were faster. Kent School, U.S.A., continued the run of U.S.A. school crew victories in the Thames Cup, in which the holders, Tabor School, were not represented. Leander, with a very good four, easily won the Stewards ; and Oriel College, Oxford, beat the record in the Visitors by twelve seconds in 7 min. 18 sec., although they left Third Trinity far behind. This record is only four seconds slower than that of the very fine Zürich four of 1935.

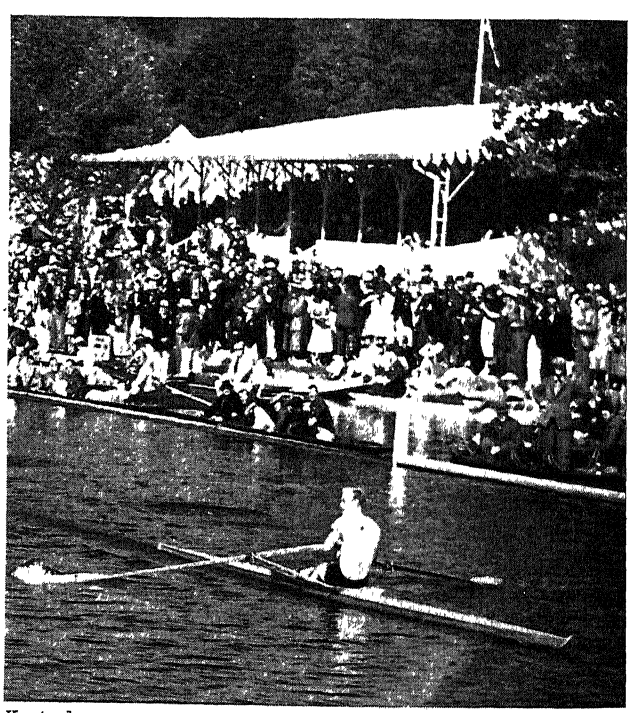
London R.C. won the Wyfold fours in 7 min. 41 sec., whilst the Leander pair, J. H. T. Wilson and W. G. R. M. Laurie won the Goblets in a time of 8 min. 8 sec., equalling that of the famous dead-heat put up by Beresford and Cloutte against Logan and Rought in 1911. The most interesting feature of the regatta was the sculling of J. W. Burk, of Penn Athletic Club, U.S.A., in a self-taught style which enabled him to beat the Diamonds records by eight seconds in 8 min. 2 sec. Sitting bolt upright, he sculled with a short piston-like stroke at a very high rate, averaging 39 strokes a minute, and he met no serious opposition.

In August, Radley sent their crew to America as the guests of Tabor Academy. They had the misfortune to lose their captain and heavyweight C. D F. Kaye through a strain, but managed to put up a very fine race. Rowing in Sippican Harbour they lost by a third of a length, their lead of half a length being turned into a deficit of three-quarters in the second half of the course, in some very rough water.

In Doggett's Coat and Badge, with a record low entry of two scullers, instead of the six provided for by Thomas Doggett in 1715, a splendid race was won by Edwin Harry Phelps, the tenth member of his family to win the coveted distinction. (G. C. D.)

United States. On the evening of June 24 the two closely matched crews of Yale and Harvard lined up near New London on the Thames River for the four-mile race upstream, their 76th annual regatta. Harvard went ahead shortly after the racing start and by a sustained drive slowly increased their lead to two lengths at the mile-and-three-quarter mark. Coming into the two-mile mark Yale began cutting down this lead and at the three-mile mark Yale had nearly caught up, and what had earlier looked like a walk away for Harvard now developed into a desperate struggle by Yale to push into the lead. Harvard held to their form at this critical point and began raising their stroke, and over the last half mile in the shadows of Bartlets Cove, slowly pulled away to win by about one length.

The annual Poughkeepsie regatta was held on June 27, and for the first time since 1931 an eastern crew took first honours in the varsity race. The powerful Navy crew held off the two western favourites, Washington and California, in spite of their many challenges and in the closing moments of the four-mile race established a definite and clean-cut victory. Seven crews entered the varsity race and all of



Keystone]
HENLEY, 1938. J. W. BURK WINNING THE DIAMOND SCULLS IN THE RECORD TIME OF 8 MIN. 2 SEC.

them stayed fairly well together throughout the distance. Washington was never the threat it was expected to be and not only lost second place to its coast rival, California, but also barely defeated Columbia for third place. Following Columbia came Wisconsin in fifth place, and Cornell and Syracuse brought up the rear in that order.

ROYAL ACADEMY OF ARTS. On Dec. 10, 1938, Sir William Llewellyn, G.C.V.O., P.R.A., having reached the age of 75, resigned the presidency; he had held the office since Dec. 10, 1928, a decade during which his well-known tact and judgment were frequently called upon, and was succeeded by Sir Edwin Lutyens (*q.v.*). During the year the following A.R.A.'s were elected Academicians: G. L. Brockhurst, A. K. Lawrence, R. G. Brundrit, W. T. Monnington, and F. W. Elwell; and Alan Beeton, A. R. Thomson, and E. Maufe were created Associates. The following R.A.'s died: Sir Guy Dawber (April 24), F. L. M. Griggs (June 7), and Sir John Burnet (July 2).

The Winter Exhibition (Jan. 3–March 12) was devoted to the style of the seventeenth century, all the exhibits, consisting of furniture, goldsmith's work, tapestry, etc., as well as paintings, drawings, engravings, and sculpture, being drawn from British collections with the exception of the king of Rumania's El Greco, "The Adoration of the Shepherds". It attracted 110,000 visitors, and the course of lectures was well attended.

The Summer Exhibition (170th, May 2–Aug. 6, 753 oil-paintings, 325 water-colours and miniatures, 176 sculptures, etc.) was heralded by the much-regretted resignation of Augustus John (*q.v.*), R.A. since 1928, because of the rejection by the Hanging Committee of Wyndham Lewis's portrait of T. S. Eliot, the poet. It was attended by 22,000 more visitors than in 1937, and the sales—273 works for some £12,000—represent a record number and price.

In the general opinion, the keynote of the Exhibition was "dullness", though, especially among the smaller paintings, there was much by way of relief. Frank Salisbury's vast "Coronation", a gift from the Dominions to H.M. the King, naturally attracted much attention, as did, among many excellent portraits, Simon Elwes's "Queen Mary"; historical paintings were much in evidence, nudes also returned; while, if there was a "picture of the year," it was Louisa Hodgson's amusing modernized version, in tempera, of "The Birth of Venus", with its reminiscence of Botticelli.



Keystone]
MR. WYNDHAM LEWIS WITH HIS PORTRAIT OF T. S. ELIOT, THE POET, WHICH WAS REJECTED BY THE HANGING COMMITTEE OF THE ROYAL ACADEMY, APRIL 21, 1938

ROYAL GEOGRAPHICAL SOCIETY: *see* SOCIETIES, LEARNED.

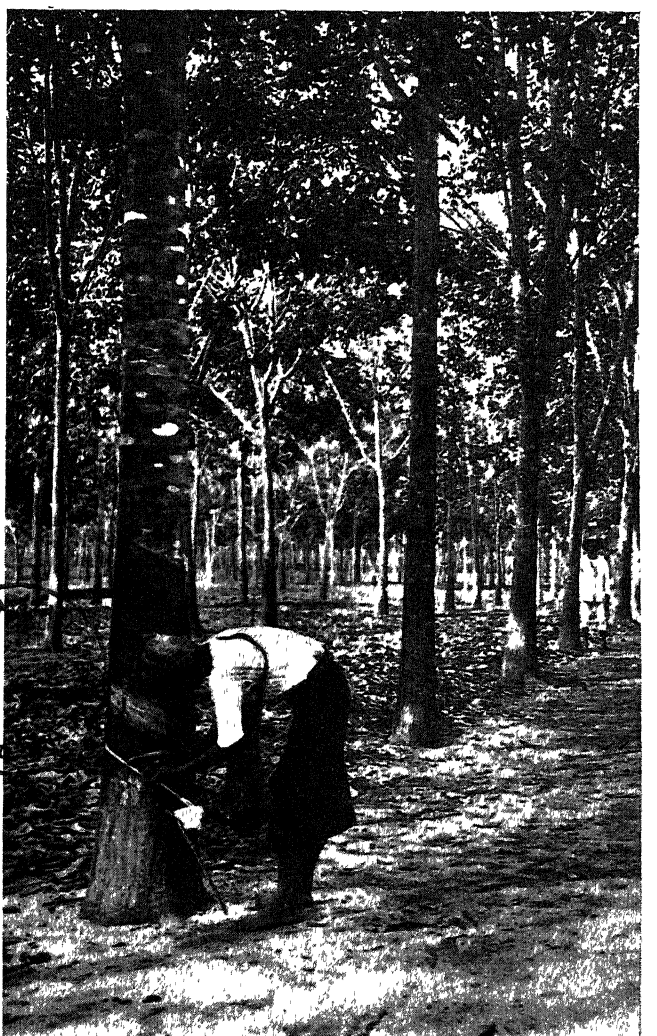
ROYAL INSTITUTION OF GT. BRITAIN: *see* SOCIETIES, LEARNED

ROYAL SOCIETY OF LONDON: *see* SOCIETIES, LEARNED.

RUANDA AND URUNDI: *see* BELGIAN CONGO

RUBBER AND RUBBER MANUFACTURE. The main countries producing crude rubber signed an international agreement in 1934, by which the regulation of supplies is left to the decision of a committee composed of delegates from each producing country and an advisory panel of consumers. This committee controls approximately 98 per cent of the world potential output. A basic quota is allotted to each producing country participating in the scheme. The quota corresponds as nearly as possible to the yearly potential production.

The International Regulation Committee meets regularly



Colonial Institute, Amsterdam]
SUMATRA. TAPPING A RUBBER-TREE

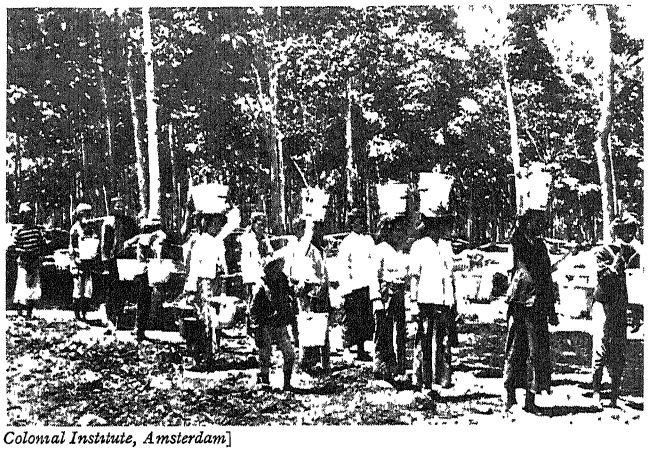
and stipulates in advance the quarterly permissible exportable amount for all countries based on a percentage of basic quotas. The same percentage applies to all participating countries, with the exception of Siam and Indo-China, who regulate their production on a different basis Despite violent fluctuations in the rate of consumption dependent on unforeseen economic factors, the International Regulation Committee has performed its task successfully and by the end of 1938 reduced world stocks outside the controlled areas to approximately six months' supply. This has been attained by drastic curtailment of the permissible export which during 1938 averaged 55 per cent of basic quotas (previous year 83¾ per cent). The London average price for the respective years was 7 31/32d. and 9½d per lb.

During 1938 the outstanding event was the renewal of the Regulation enactment for a period of five years. Basic quotas were readjusted and revised, and from 1,335,250 tons in 1938 rise to 1,569,000 tons in 1943. To arrive at the total world potential production one has to add that of Indo-China, approximately 60,000 tons, and non-agreement countries about 30,000 tons. Under the control scheme permissible stocks held by producers are regulated and the amount of fresh planting is limited. (C. A K.)

Rubber Manufacture. No new materials promising extensive use in the industry appeared in 1938 but increased consumption of rubber-like synthetics, especially the German Perbunan, was reported in some countries. Following the introduction of pellet carbon black, suppliers of other pigments developed methods of forming pellets of their products suitable for bulk handling. Monastral Blue, first announced in England in 1934, has largely replaced all other blue pigments for colouring rubber. New members of the sulphenamide class of accelerators appeared. These handle safely at processing temperatures, yet activate vulcanization powerfully at slightly higher temperatures New fibrous materials—glass, vinyl polymers, and stranded steel—were studied for possible applications in rubber manufacture without, as yet, extensive commercial application.

Processing. A new mercaptan became available for the chemical softening of rubber. A new type of mill roll, bored with longitudinal holes near the surface, was developed. Circulating water conducts heat from the roll surface more effectively than in older forms and permits closer control of rubber temperatures during milling. For supplying motor-car manufacturers with needed parts the process of extruding smooth-surfaced strips of complicated section shapes, often with thin walls, at high speed and of vulcanizing them in hot air quickly without deformation was developed to a high degree of perfection.

Products. Increased safety of travel on pneumatic tyres was gained by improvement in both casings and tubes. Reduction of danger from punctures and blow-outs was attained by improvement of self-healing types of tube with heavier walls or by integrally attaching to the tube a so-called "inner tyre", reinforced with fabric, arranged to hold air should the outside rubber tube be ruptured. The life of both rayon and cotton reinforced casings designed for high-speed service was prolonged. Rayon is used because of its superiority to cotton in resisting deterioration by the heat developed within the tyre walls. Changes in the construction of cotton cords vastly improved their resistance to heat and made possible construction of tyres which do not develop high temperatures as with older types. It is as yet impossible to indicate which line of development will



Colonial Institute, Amsterdam]

TRANSPORTING RUBBER LATEX FROM GARDENS TO FACTORY, IN SUMATRA

ultimately produce the safest and most economical product. Improved designs of treads reduce the danger of skidding on wet roads, and better wearing tread compositions prolong the useful life of non-skid designs. Gaskets made of synthetic elastic materials in combination with asbestos proved effective in electric refrigerators in resisting swelling by the low-boiling refrigerants used. These synthetics have also replaced rubber in water-lubricated bearings for service where oil is unavoidably present with the water. Clothing, shower curtains, and umbrellas of Koroseal-treated fabric and draw sheets of Koroseal-coated paper for printing presses were placed on the market. Linings of Koroseal in tanks to hold nitrichydrofluoric acid mixtures for cleaning stainless steel proved their value in this severe service. The manufacture of seat cushions and mattresses of highly porous rubber continued to increase. These may be made from latex by several methods, or from dry rubber by saturating it with gas under high pressure and expansion at ordinary pressure during vulcanization. Rubber springs, having demonstrated advantages over steel on street cars, are now under development for other types of vehicle. Vibro-insulators of rubber also found wider acceptance for eliminating disturbing noise and vibration from machinery. Electrically conducting surfacing, effective in dissipating static charges from aeroplane de-icers, is now supplied to avoid puncture of the de-icers by static discharge and to eliminate disturbance of radio communication from this cause. Improved rubber printing plates are now acceptable for practically all types of printing except half-tone reproductions. Improved braided-wire reinforcement has been adopted in hose for high-pressure steam and made possible hydraulic control mechanisms on certain vehicles. Demand for increased power transmission from the axles of railway carriages to drive the air-conditioning equipment used in some countries, has led to the substitution of V-type belts run in grooved pulleys for the flat belts used for the lighting systems alone. Conveyor belts with longitudinal reinforcing cords have gained increased favour since methods were developed of vulcanizing the ends together. They are more resistant to the shock of loads falling upon them than belts reinforced with cross-woven fabrics. The ageing of hard rubber designed to be flexible at low temperatures has been vastly improved, and ebonite-like compositions which retain their hardness and strength at unusually high temperatures are also now available.

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RUMANIA. M. Goga, who had been appointed premier on Dec. 28, 1937, began his regime with various anti-Semitic measures on the Nazi model, directed chiefly against Jewish doctors, journalists, and innkeepers He also dissolved parliament (which had not met), and ordered new elections for March. The King, however, kept foreign policy "independent of domestic policy", and on the old lines of the treaties with France and Poland, the Little and Balkan Ententes, and the League On Feb. 10, the government's measures having caused great economic confusion, the King dismissed M. Goga and appointed a provisional concentration government with the Patriarch of Rumania, M. Miron Cristea, as premier, and six ex-premiers as ministers without portfolio. In a royal proclamation the King sharply blamed the party system, with which, he said, he had tried to work for eight years. "Rumania must be saved, and I am determined to do it". Martial law and censorship were proclaimed, and a series of edicts forbade all state, municipal, etc., employees and all priests to have any contact with politics; dissolved all political parties and associations, and forbade marching in formation, singing political songs, etc. On Feb. 20 the King issued a new constitution, which reduced the number of senators and deputies, raised the life of the chambers from four years to six, offered fuller representation to peasants, workers, etc., and provided for the dissociation from politics and reform of the civil service. Voting was to be compulsory, the suffrage commencing with thirty years (both sexes). Long-established minorities were guaranteed equal rights, and religious toleration was promised. The King was empowered to make war and peace, conclude treaties and (subject to later ratification) enact valid decree-laws while parliament was not sitting.

An open plebiscite on Feb. 24 having given 4,297,851 votes in favour of this constitution and only 5,483 against it, it was promulgated on Feb. 27. On March 30 the cabinet was reconstructed, the ex-premiers, with other notabilities, being transferred to a Council of State. A ministry of national economy and a national economic council were appointed. The National Peasant Party protested sharply against the King's *coup*, but contented itself with words. On the other hand, the authorities in April arrested M. Codreanu, leader of the "All for Fatherland" and nearly 1,000 of his followers who, it was said, were seizing the occasion offered by Germany's occupation of Austria to plot a revolt. On May 27 Codreanu was sentenced to ten years' imprisonment for plotting against the social order, preparation for rebellion, instigation to murder, and treasonable relations with foreign Powers. Lighter sentences were passed on many of his followers. On Aug. 4 a Minorities Statute appeared, re-enacting many of the provisions which Rumania was already bound by international treaty to observe, and appointing a Commission for Minorities, with ministerial rank. The anti-Semitic tendency became less pronounced, but Jews resident in the new territories of Rumania on Dec. 1, 1918, and after were required to prove their citizenship, many failing to do so.



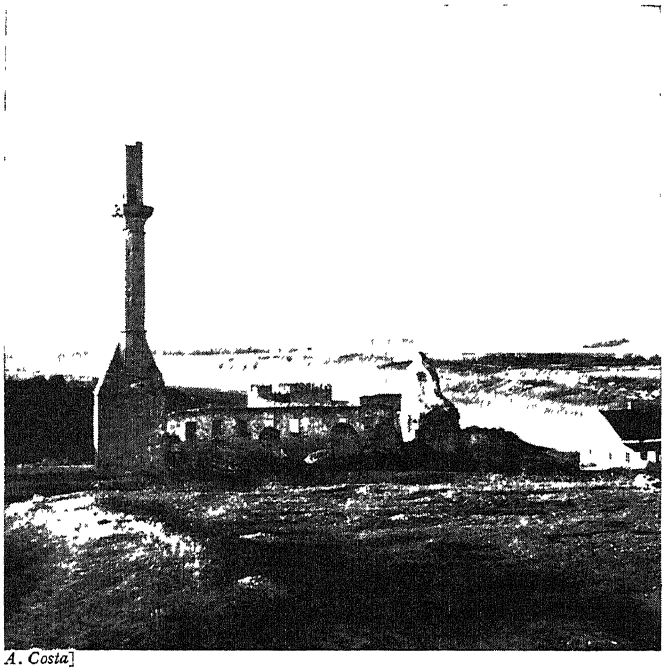
A. Costa]

BRATĬANU BOULEVARD, BUCHAREST

On Aug. 12 a new statute was issued, abolishing the old historic divisions of Rumania and dividing the country into ten new provinces, grouped round the main rivers.

Foreign Affairs. In foreign policy, Rumania supported the policy of modified conciliation shown by the Balkan and Little Ententes (*qq.v.*) towards Bulgaria and Hungary respectively. In the Czechoslovak crisis she consulted with the U.S.S.R., and was believed to have consented to the dispatch of military material from that country to Czechoslovakia. The direct railway line across the northern Carpathians was rapidly expanded. In October, Rumania resisted Poland's endeavours to persuade her to favour the cession of Carpatho-Ruthenia to Hungary, and declared that she herself should take, rather than cede, territory. The armament programme was speeded up, and decrees enacted militarizing national production.

In November the King and Crown Prince visited England, returning via Germany. On Nov. 28 the Rector of Cluj University was mortally injured by three young members of the Iron Guard. On Nov. 30 Codreanu and twelve of his followers were shot "while trying to escape", the same fate soon after overtaking the perpetrators of the Cluj outrage. Other severe measures followed against the Extreme Right. On Dec. 16 a royal decree announced the establishment of a single legal political party, the "National Renaissance Front". (C. A. M.)



A. Costa]

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Area and Population :

Area 113,884 sq. miles.

Population (Dec. 31, 1937) 19,646,000 (Rumanians 75 per cent ; Magyars 8 per cent ; German 4 per cent).

Chief Towns : Bucharest, 639,000 ; Chisinau 116,000 ; Cernauti, 111,000 ; Iassy, 104,000 ; Galati, 101,000.

Ruler. King Carol II.

Language. Rumanian.

Religion. Christian (mainly Greek Orthodox).

Production 1937 :

Wheat	3,760,100	metric tons
Barley	917,200	,, ,,
Rye	451,300	,, ,,
Oats	512,800	,, ,,
Maize	4,751,900	,, ,,
Potatoes	2,106,500	,, ,,
Beet Sugar, refined	70,400	,, ,,
Tobacco	10,300	,, ,,
Soya beans	70,300	,, ,,
Flax fibre	8,700	,, ,,
Hemp fibre	27,000	,, ,,
Petroleum, crude	7,149,000	,, ,,
Wine	10,663,000	hectolitres
Natural Gas (1936)	2,130,000,000	cu.metres
Lignite	1,879,000	metric tons
Coal	304,000	,, ,,
Manganese Ore	15,000	,, ,,
Iron Ore (metal content)	58,000	,, ,,
Pig Iron	127,000	,, ,,
Steel	239,000	,, ,,
Gold	7,871	kilogrammes

Industry and Labour :

Index of Industrial Production, average (1937)	170
(average 1929 = 100) (Sept. 30, 1938)	163
Unemployed registered, average (1937)	10,851
,, ,, (April 30, 1938)	7,957

Overseas Trade, merchandise 1937 :

Imports	17,896,500,000 leu
Exports	30,965,100,000 ,,

Communications :

Roads *c.* 8,000 miles (including international highway) suitable for motor traffic.

Railways, total State 9,400 miles.

Motor vehicles licensed (Dec. 1937) : cars and taxis 19,500 ; lorries and buses 7,000 ; cycles 1,300.

Finance and Banking :

Revenue, ordinary (1938–39)	33,350,000,000 leu
Expenditure, ordinary (1938–39)	33,350,000,000 ,,
Public Debt (March 31, 1935)	135,052,000,000 leu
Notes in circulation (Dec. 3, 1938)	33,785,000,000 ,,
Gold and gold exchange reserve (Dec. 3, 1938)	18,147,000,000 ,,
Exchange Rate	650–670 leu = £1 stg.

Education 1936–37 :

Elementary schools 15,510 ; scholars 2,339,892

Secondary ,, 741 ; ,, 159,878

Universities 4 . . Students (1934–35) 3,081

RUNCIMAN, WALTER RUNCIMAN, 1st Viscount, of Doxford (1870–), British statesman, is the eldest son of the 1st Baron Runciman (1847–1937), shipowner, and entered parliament in 1899 as a Liberal After holding many offices (see *Ency Brit.* vol. 19, p 658) he retired from the government owing to disagreement with Mr. Lloyd George's policy in 1916, and from 1918 to 1924 was not in parliament. In 1931 he joined the Liberal-National party, and from November in that year till May 1937—when, in his father's lifetime, he was awarded a Viscountcy—he was, for the second time, president of the Board of Trade, and as such played a prominent part in the Ottawa Conference of 1932 and the World Economic Conference held in London in 1933.

At the end of July 1938 he was chosen, with the approval of the Czechoslovak and French governments, to act as an independent and unofficial mediator and " standing adviser " to the Czech government in its dispute with the Henleinist Sudetens. Accompanied by a number of experts he arrived in Prague on Aug. 3 ; he was successful in bringing the opposing factions face to face, but after the commencement on Aug. 14 of German manœuvres on an unprecedented scale his task became impossible and negotiations were suspended (Aug. 17) ; there was a further meeting on Sept. 10, but three days later negotiations were broken off. On Sept. 16, the day of Mr. Chamberlain's return from Berchtesgaden, Lord Runciman returned from Prague, and on the 21st handed the prime minister his report of his mission. On the resignation of Lord Hailsham on Oct. 31 Lord Runciman re-entered the cabinet as Lord President of the Council.

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(S. YAK.)



A Costa]
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See Sir John Hope Simpson, *Refugees: Preliminary Report of a Survey*, London, 1938; W. Chapin Huntington, *The Homesick Million. Russia-out-of-Russia*, Boston, 1933.

RUSSIAN LITERATURE. Literature in the U.S.S.R. is traversing one of its most barren periods, with little of artistic merit to record. But for the appearance in one of the reviews of the first part of the last volume of Sholokhov's *Tikhy Don*, dealing with the collapse of the White Movement and the hero's gradual political "regeneration", 1938 would have been even poorer than 1937 in imaginative literature. A play by Leonov (*Polovchanskie Sady*) and a book of stories by Zoshchenko (*1935–1937*) are the only complete works deserving notice. Interesting extracts have appeared in *Literaturnaya Gazeta* from a new novel by Boris Pasternak, the outstanding Soviet poet who was lately under a cloud. On the "poetry front" Aseyev's poem about Mayakovsky attracted attention. As before, there is much valuable literary research. Two volumes of *Literaturnoe Nasledstvo*, dealing with Franco-Russian literary and cultural intercourse, and another devoted to the period of Russian Symbolism, deserve mention, together with Zhirmunsky's very thorough study of Goethe in Russian literature, a new volume of *Pushkin* (a non-periodical publication of studies and materials concerning the poet), Goncharov's letters and critical articles, and Ostrovsky's letters and diaries. The 750th anniversary of *Slovo o Polku Igoreve*, Russian national epic, brought forth several new editions and fresh translations of it.

The following writers died in the U.S.S.R.: Kuprin (*b.* 1870), one of the outstanding representatives of pre-revolutionary realism and an *émigré* until 1937; Romanov (*b.* 1884), best known as the author of the novel translated into English as *Three Pairs of Silk Stockings*; Malyshkin (*b.* 1890), author of *The Fall of Dair* and *Sevastopol*; and Zhitkov, a very popular author of children's books.

In Ukrainian literature, Korneychuk's new play about Bohdan Hmelnitsky, expressive of the prevailing patriotic tendency; Smolich's novel, *Vosemnadsatiletnie*, retrospective and yet topical in its subject (the German occupation of the Ukraine in 1918), and an anthology representing what is best in contemporary Ukrainian poetry (Tychina, Rylsky, Bazhan, Pervomaisky, and others) call for attention. Preparations proceeded during the year on a grand scale throughout the Union, but more especially in the Ukraine, for a solemn celebration, in Feb. 1939, of the 125th anniversary of Shevchenko, the Ukrainian national poet.

Russian literature in exile, which—the Far East apart—is becoming almost exclusively confined to Paris, shows no signs of decline. First instalments of Shmelev's new novel (*Inostranets*) and of what promises to be one of Aldanov's most interesting works (*Nachalo kontsa*) appeared in reviews. Nabokov-Sirin's *Priglashenie na kazn'*, the queerest and most original of his novels, a kind of macabre *Alice in Wonderland*, was published in book-form, while his *Dar* was concluded in *Sovremennyya Zapiski*. He also published his first plays, *Sobytie* and *Izobretenie Valsa*. The former was produced in Paris. Nina Berberova, in addition to a new novel on the theme of personal happiness (*Bez zakata*) and a novelized life of Borodin, the composer, also wrote her first play (*Madame*), likewise produced in Paris. A new novel by Gazdanov and books of stories by Osorgin and Teffi must be mentioned. Poetry continues to flourish in the emigration, its standard being higher than in the U.S.S.R. The 1938 crop included new books by Mme Hippius (*Siyaniya*) and by such younger poets as Knut, Ladinsky, Smolensky, and Terapiano.

Merezhkovsky's *St. Francis of Assisi* and *Joan of Arc* continued his series of "Saints' Faces". He treated his subjects in philosophical rather than in purely biographical terms.

In the person of Lev Shestov (*b.* 1866) Russian emigration lost one of its outstanding philosophers, who also held a place of merit in letters. Shestov's interest of late was centred on Kierkegaard, with whose philosophy he felt an affinity. Most of his recent work appeared in French. (G. St.)

RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC, THE (R.S.F.S.R.). A number of notable administrative reforms were carried out during 1938 in this, the largest Republic of the Soviet Union. The former Sverdlovsk Province and the Far Eastern Territory had proved to be too extensive as administrative units and were in October subdivided into the Perm and Sverdlovsk Provinces, and the Khabarovsk and Maritime territories respectively. At the end of May a new province of Murmansk was formed, bordering the Arctic Ocean and the White Sea. Further, during the year several districts in the Republic were transformed, a number of labour-camps being changed into towns, and many settlements becoming labour camps, while a number of localities were chosen to be new centres of the districts. In August also a new military district of Orel was created.

The Supreme Council of the R.S.F.S.R. elected in June consisted of 568 communists and 159 non-party members. Of the delegates 339 were workers, 195 peasants, and 193 employees and representatives of the Soviet intelligentsia; 157 were women. Some 99·3 per cent of the electorate voted and 320,496 voters struck out the names of the official candidates on their voting papers. At the Supreme Council's first session in Moscow from July 15 to 20, the government, consisting of eighteen members under the leadership of Nikolai Bulganin, was elected, and several paragraphs of the Constitution were modified. In the debates the activities of the Commissariats for Health, Education, Local Industry, Trade, Agriculture, and the State Farms were subjected to particularly sharp criticism. In the more inaccessible regions of the Republic, for example the remoter parts of Siberia, the census of the population, due to be taken in January 1939, was already being carried out in October 1938.

Area and Population:

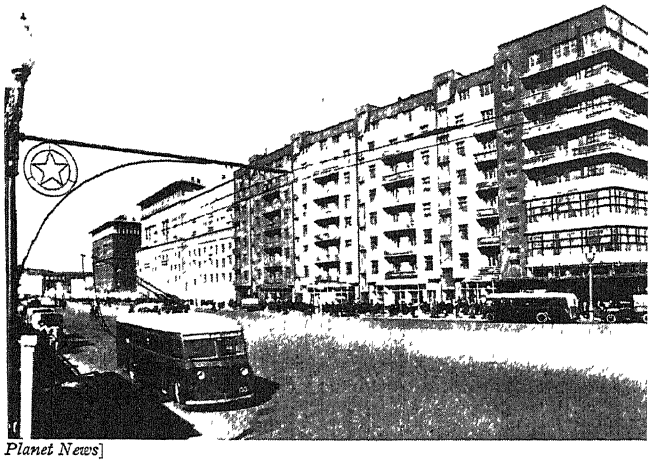
Area 6,370,264 sq. miles (78 per cent of the Soviet Union).

Population (1937) 113·6 millions (73·4 per cent Russians; 7·8 per cent Ukrainians; 2·8 per cent Tatars).



Planet News]

LENIN'S SQUARE IN KUIBYSHEV (SAMARA), RUSSIAN S.F.S.R.



Planet News]

THE RECONSTRUCTED SADOVOE RING, IN MOSCOW

Chief cities: Moscow, the capital (1936), 3,567,900, Leningrad (1935), 2,739,800, Gorky (formerly Nizhni Novgorod), 512,600, Rostov-on-Don, 479,400; Sverdlovsk (form. Ekaterinburg), 450,000.

Resources and Production 1937:

Collective farms	173,300
Machine and tractor stations	3,813
Tractors	267,900
Grain crop	81·7 million tons
Retail trade turnover	79·2 milliard roubles
Coal hewn	50 million tons
Machine industry, production value	18·1 milliard roubles
Light industry	17·5 ,, ,,
Food industry	9·5 ,, ,,

Currency: 24·89 roubles to the pound sterling (nominal)

Budget 1938: 21,407 million roubles

Communications:

Railways, length open to traffic (1936)	37,879 miles
Motor roads (1937)	18,030 ,,

Education 1937–38:

Elementary school pupils	7,830,200
Secondary and technical school pupils	12,037,600
University and college students	356,500

Miscellaneous:

Libraries	42,344
Museums	519
Theatres	4,216
Cinemas	20,000
Newspapers published (1936)	6,133
Books ,, ,,	32,187

(S. YAK.)

RUSSO-JAPANESE BORDER CONFLICT. Much the most serious of the many border clashes which have occurred between Japan and the Soviet Union since the establishment of Manchukuo broke out around the heights of Changkufeng, near the point where the boundaries of the Soviet Far Eastern Area, Manchukuo, and Korea meet, in the latter part of July 1938. Artillery, tanks, and aeroplanes were brought into action. Each side admitted hundreds of casualties, and asserted that losses running into thousands were inflicted on its adversary.

The Changkufeng "incident" started on July 12, when a detachment of Soviet troops occupied the height and commenced to throw up fortifications. Hitherto Changkufeng had been a sort of No Man's Land. Both the Soviet Union and Manchukuo asserted a claim of possession; but it had remained unoccupied by either side. After the Soviet occupation, comment in the Japanese and foreign press suggested that the hill possessed considerable strategic value, since it commanded the Soviet naval base in Possiet bay, south-west of Vladivostok, and was also a point of vantage in relation to the new Japanese port of Rashin, in North Korea. There was no very satisfactory explanation of why the occupation of the hill had been deferred so long, if it really possessed such great strategic importance. The whole affair received much less public discussion in the Soviet Union than in Japan.

A Japanese protest was filed in Moscow immediately after the Soviet troops had established themselves on the hill. The Soviet standpoint, maintained by Foreign Commissar Maxim Litvinov throughout the dispute, was that Changkufeng was within the Soviet frontier, as defined by the Hunchun Treaty of 1869, between Russia and China. The Japanese laid more stress on place-names and traditional usages which were alleged to establish a prescriptive Manchurian or Korean right to the possession of the hill.

A Japanese gendarme was shot and killed while reconnoitring the Soviet position on July 15. The Japanese ambassador in Moscow, Mr. Mamoru Shigemitsu, hurried back from a vacation to take up negotiations in Moscow. After the Russians had occupied another hill, called Shatsaoping, adjoining Changkufeng, Shigemitsu on July 22 warned Litvinov that Japan might be obliged to resort to force if the incident were not settled amicably. Litvinov retorted that such methods would be unavailing with the Soviet Union.

The incident reached its more serious phase when Japanese troops, on the night of July 30, launched a surprise attack and drove the Soviet forces from Changkufeng and Shatsaoping. The Soviet reaction to this attack was prompt and vigorous. It took the form of repeated attempts to recapture the hill, accompanied by bombing raids directed, not only against the Japanese troops entrenched on the summit of Changkufeng, but also on the North Korea railway and on Korean villages behind the lines. Japan took an especially serious view of these attacks on indisputably Japanese territory in Korea.

Japanese efforts, after Changkufeng and Shatsaoping had been occupied by the Japanese troops, were mainly directed towards preventing any spread of the conflict. Military activity was confined to strictly defensive purposes; there were no Japanese air-raids on Soviet territory. The Japanese forces contented themselves with holding their position on the heights against repeated Soviet attacks.

At the same time the Japanese ambassador in Moscow was authorized to work for a solution of the controversy on a basis of mutual withdrawal from the disputed territory. However, Litvinov, on two occasions, on Aug. 4 and Aug. 7, rejected suggestions from Shigemitsu, the first proposing the restoration of the *status quo*, as before the Soviet occupation of the heights, the second suggesting mutual withdrawal to a reasonable distance from the scene of hostilities.

Tokyo began to make preparations for possible Soviet air-raids. The publication of weather reports was stopped and the city was placed in semi-darkness in the evenings. There were several conferences of high military and civilian officials about the threatening border situation. The chief of the general staff, Prince Kotohito Kanin, and the war minister, General Seishiro Itagaki, called on the emperor at his summer villa in Hayama on Aug. 10—an indication of the gravity of the situation.

Terms of Settlement. A settlement was achieved after a third conference between Shigemitsu and Litvinov on the evening of Aug. 10. Under its terms fighting was to cease at noon on Aug. 11, under conditions to be supervised by military representatives on the spot. Each army was to hold the line which it occupied at midnight on Aug. 10. A border commission with an equal number of representa-

tives for the Soviet Union on one side, and for Japan and Manchukuo on the other, was to be constituted. Shigemitsu rejected Litvinov's suggestion that a neutral member be added to this commission Litvinov insisted that the treaty between Russia and China should be the basis for the work of the border commission. He conceded, however, in response to Shigemitsu's suggestion, that " materials bearing on the questions, such as boundary marks and stones, should be assembled and examined by the commission ", that " all matters not in contravention with the international treaty may be taken into consideration, but that, wherever they conflict with the treaty, the latter shall have the decisive authority ".

The Course of Hostilities. It is difficult to establish the course of hostilities with absolute certainty, in view of the frequent contradictory statements which were issued from Soviet and Japanese sources. Typical of these contradictions are the estimates of losses. The Japanese Army, in a communiqué published after the end of the fighting, estimated that about 900 Japanese soldiers and officers had been killed and wounded, while losses totalling 4,500 had been inflicted on the Soviet troops. The Soviet military authorities admitted a loss of 236 killed and 611 wounded, estimating the Japanese casualties at 600 killed and 2,500 wounded.

There is reason to believe that at the conclusion of the fighting the Japanese troops still held the crest of the Changkufeng hill, although the Soviet troops had forced their way most of the distance up the slope. The military commanders on the spot carried out the agreement to cease fighting without friction. As a preliminary step each side withdrew eighty metres from the line which was held. Dead bodies were exchanged. Prisoners were not mentioned in reports of the fighting, although the Japanese press gave a good deal of publicity to the stories of two deserters from the Soviet forces.

Later the Japanese troops fell back altogether from Changkufeng and withdrew to the southern side of the Tumen River. Up to the end of October no concrete results were reported from the work of the border commission. During the period of the incident the Soviet authorities, despite Japanese protests, compelled the closing of the Japanese consulates in two towns of the Far Eastern Area, Khabarovsk, headquarters of the Soviet Far Eastern Army, and Blagoveshchensk.

Military Results. The military results of the conflict are not easy to assess, partly because the accounts issued by the two sides are contradictory, partly because the limitation of the hostilities to a small area in the immediate neighbourhood of the Changkufeng hill limited very greatly the strategic possibilities of both armies. The Soviet Far Eastern Army seems to have made liberal use of the tanks and aeroplanes with which it is known to be well provided.

The marshy ground at the foot of the hill was apparently unfavourable for the operations of tanks. The Japanese claimed the destruction of a considerable number of them, but it is difficult to determine whether they were actually destroyed or merely bogged down in the swampy soil. There were no air combats, and the Soviet raids were too restricted in scope to permit any broad deductions about the striking power of the Soviet air force. The Japanese forces, obliged to remain in position for over ten days without relief, seem to have put up a stubborn defensive fight.

Political Background. Mutual ill-will and distrust have made for an abnormal number of border incidents along the 3,000-mile frontier between Manchukuo and the Soviet Union and Outer Mongolia. Most of these were of a minor character, but there have been a number of clashes with loss of life on one or both sides. The most serious of these, up to the Changkufeng miniature war, were along the frontier of Outer Mongolia in the winter of 1935–36 and on the Amur River, between Blagoveshchensk and Khabarovsk, in July 1937. A Soviet patrol boat was sunk during this last affray.

It is a matter of conjecture why the Changkufeng fighting went so much farther than previous encounters. Since Japan was deeply involved in hostilities in China, the Japanese Army was clearly not eager to assume the risks of a war with the Soviet Union. Quite probably the Soviet military leaders on the spot and the Soviet political leaders in Moscow appraised this fact, and felt free to take a stronger stand than they had adopted on some previous occasions.

On the other hand, the acceptance of a compromise formula for cessation of hostilities showed that the Soviet government did not desire a major trial of strength with Japan at the present time. There is reason to believe that advice tendered by Germany to Japan and by Great Britain and France to the Soviet Union was of a pacifying and restraining character.

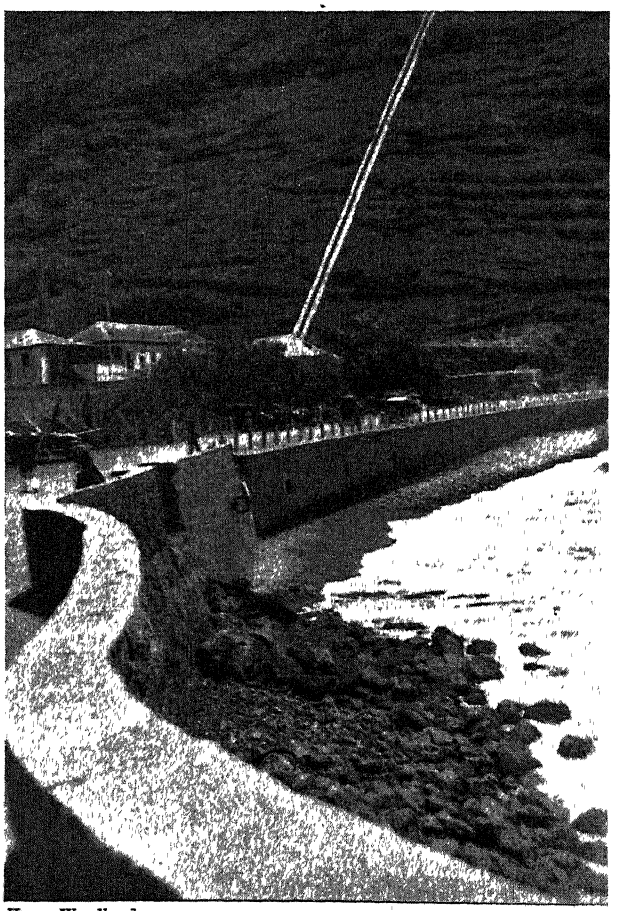
No fundamental change in Soviet-Japanese relations was perceptible during the months which immediately followed the Changkufeng conflict. There was the usual crop of petty border squabbles, and there were no signs of appeasement, or of any move towards a fundamental settlement of a strained frontier situation. But there was also no evidence that either Japan or the Soviet Union proposed to pass from the present state of armed vigilance to one of active aggression. (W. H. Ch.)

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SAHARA, THE: *see* FRENCH WEST AFRICA AND THE SAHARA.

ST. HELENA AND ASCENSION ISLANDS. A British colony off the west coast of Africa, consisting of the two islands of St. Helena and Ascension. During 1938 attention was drawn to the existence of acute economic distress in St. Helena owing to the depression in the flax industry, low wages, and the high cost of living. Following questions in parliament, the government stated that they had under active consideration various proposals for alleviating the depressed condition of industry, and had already approved a subsidy which would enable the flax mills to reopen.

Area and Population :
Area : St. Helena, 47 sq miles ; Ascension, 34 sq miles.
Population (est Dec. 31, 1936) : St. Helena, 4,341 ; Ascension, 115
Chief Town (capital) Jamestown.
Governor. Henry Guy Pilling, C M.G.
Production 1937 : (export figures)
Flax fibre, 1,090 tons , tow, 418 tons.
Overseas Trade 1937 :
Imports, £37,828 ; re-exports, £461.
Exports, domestic, £25,943 (flax fibre £21,210).
Roads : 45 miles suitable for motor traffic in St. Helena.
Finance :
Revenue : (1937) £41,436 ; (est. 1938) £26,953
Expenditure : (1937) £23,191 ; (est. 1938) £25,655.
Education 1937 : 803 scholars (332 in government schools).



Horace Wyndham]
ST. HELENA : LANDING STAGE AND LADDER HILL

ST. KITT'S : *see* LEEWARD ISLANDS.

ST. LOUIS, the largest city in the State of Missouri, covers a total area of 61·3 sq. miles, and has 856,000 persons living within its corporate limits Added to its industrial life during 1938 were six important plants turning out manufactures ranging from puffed cereals to shoes. Much of the public building work involved hospitals. The Bliss Psychopathic Institute was scheduled for opening in 1939, while additions were made to hospitals for negroes and the tubercular. Two new free junior colleges were opened, one for white students, the other for negroes. The Art Museum acquired some valuable oil paintings and the Municipal Opera presented twelve musical plays, attracting 765,131 persons ; the St. Louis Symphony Orchestra gave 58 performances, under the baton of Vladimir Golschmann

The year's more important legislative enactments included extension of anti-smoke legislation and the establishment of a " public defender " system to provide free legal counsel for indigent first offenders.

ST. PIERRE AND MIQUELON, a French colony comprising St. Pierre, Miquelon, and six smaller islands near Newfoundland. Capital, St. Pierre (pop. 3,396). Area, about 93 sq miles ; population (1936 census), 4,175, a decline of 158 since 1931. The sole industry is fishing.

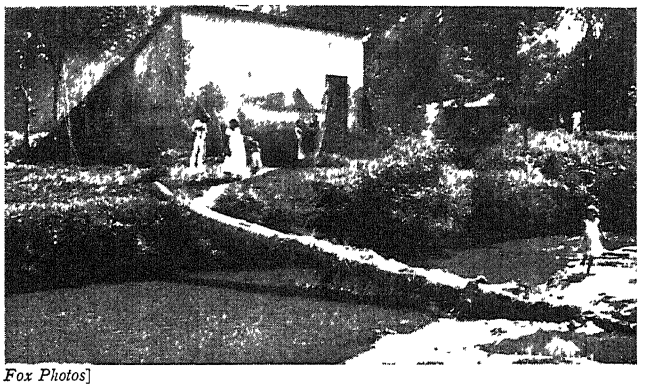
Exports in 1937 totalled 14,585,000 francs, imports 19,771,000. The first half of 1938 showed a marked improvement over 1937, with 9,223,000 francs imports and 14,291,000 exports. Imports, largely preservatives for fish, and foodstuffs, are from Canada and the United States, who with the French colonies are also the best customers. But in spite of efforts begun in 1935, and continued since, to better the colony's economic condition, through loans to shipping interests, it still shows heavy annual deficits.

ST. VINCENT : *see* WINDWARD ISLANDS.

SAKHALIN, a long, narrow island in the North Pacific, area 24,560 sq. m., was divided into two approximately equal sections after the Russo-Japanese war, the southern part being assigned to Japan, while Russia kept the northern. The fiftieth degree of latitude represents the boundary line. There have been frequent disputes about the interpretation of the concession agreements granted to Japanese companies for the exploitation of oil and coal deposits in the north, but there has been no border friction, as along the Manchukuo-Siberian frontier. The chief exception to this rule was the firing by Soviet border guards on a party of Japanese parliamentarians escorted by police, who approached the boundary in August, shortly after the settlement of the Changkufeng incident. North Sakhalin has been included in the general Soviet plans for an industrialized and self-sufficient Eastern Siberia and emigration to this remote outpost of the Soviet Republics has been encouraged. Japan has been equally energetic in developing its part of Sakhalin. The forests have, indeed, been too ruthlessly exploited ; and destructive fires, encouraged by the dry summer climate, have depleted the timber stands which supply pulp for Japan's large paper industry. There are valuable fisheries of herring, trout, salmon, cod, shellfish, and other marine products, and the reserves of coal are

estimated as high as 1,500 million tons, although present annual output is only a little over one million tons. The population of the Japanese part of Sakhalin is about 336,000 (W H. CH.)

SALVADOR, EL, smallest of the Central American republics; capital, San Salvador (pop 136,845); area 13,172 sq miles. The population by the June 1937 census was 1,631,967, with 38 per cent urban, and was officially estimated at 1,685,827 in June 1938. Government is in the hands of the president-dictator, General Martínez, who



Fox Photos]

TYPICAL NATIVE DWELLING

has followed a firm policy of internal improvements On Nov. 21 a constituent assembly was convened, and on Dec. 10 it formally cancelled the presidential election scheduled for Jan. 1939 and extended the president's term of office. Martial law was then declared to avert disorders El Salvador has 375 miles of railway, and a rapidly improving highway system. Salvadorean portions of the Inter-American highway were reported "almost completed" at the end of 1938.

The principal products are corn (for domestic consumption) and coffee, which accounts for eighty per cent of the exports. Unsatisfactory world coffee prices materially affected Salvador in 1938, and foreign debt payments were suspended in February. To ease the situation, coffee was traded to Italy and to Germany on a barter basis. Exports and imports in 1937 totalled 38,786,235 and 26,011,868 colones, heavy increases over 1936, with over 55 per cent to the United States. In 1938 exports declined almost fifty per cent. The monetary unit is the colon (value 1*s.* 9*d.*). The 1938–39 budget calls for 17,353,824 colones, with eleven per cent for education. School enrolment (1937) was 68,102. (L. W. BE.)

SALVATION ARMY, THE. The Salvation Army is now established in 95 countries and colonies, preaches the Gospel in 104 languages, maintains 1,673 social institutions, and regularly publishes 126 weekly, monthly, and other periodicals with a total circulation per issue of 1,550,422 copies.

Early in 1938 General Evangeline Booth announced an important development—the International Youth Movement. "World conditions to-day", said the General, "demand drastic measures to save youth from drifting into godless materialism, and awake in it the spirit of self-sacrifice to meet the ever-increasing need for zealous and unselfish service to God and man. Every existing opportunity must be seized and new opportunities created for directing the energies of the Army towards capturing youth for Christ." The Salvation Army already had its international battalions of youth, which include 13,293 juvenile bandsmen, 35,770 corps cadets, and some thousands of songster brigades; but the new International Youth Movement has introduced Torch-bearer Groups, which are attracting numbers of young people from outside the pale of religion. All are made welcome at the Torch-bearer social gatherings, but full membership is granted only after a promise "to live a clean and upright life and be helpful to others".

This International Youth Movement has been inaugurated in many European countries, in Australia, Canada, the United States of America, India, Ceylon, Japan, Tanganyika, the Belgian Congo, the West Indies, Argentina, Central America, and other lands. In June, Lord Aberdare opened at Sunbury-on-Thames a Salvation Army Youth Centre, equipped with swimming pool, tennis courts, gymnasium, and other attractions. Similar Youth Centres elsewhere will follow.

General Evangeline Booth had contemplated retiring on Christmas Day, 1938, her 73rd birthday; but in response to the desire of Army leaders in many lands she consented to remain in office until the end of Oct. 1939. The General's public engagements have included large gatherings in Britain, Norway, Switzerland, and Holland, where Queen Wilhelmina and Princess Juliana attended one of her meetings. King Haakon received her in audience at Oslo. Among her many other engagements was the stone-laying at a new Goodwill Settlement in the slums of Hoxton.

In China, in addition to the winter-relief always administered, succour was given during the year to hundreds of thousands of war-victims, including first-aid after air raids, and the provision of crutches and artificial limbs. Army Halls were damaged or destroyed by shell fire in several provinces. Major Dempster, an American officer, was murdered by bandits who raided the Army's General Hospital at Ting Hsien, and a Chinese lieutenant lost his life while assisting refugees to safety.

Japanese officers of the Salvation Army ministered to their countrymen at the front in China; while in Japan they succoured the wives and children of men on active service.

In co-operation with the British and Australian governments, the Army in 1938 resumed migration activities. Parties of young women for domestic service and youths for farm work were selected in Great Britain and suitably placed in Australia, the youths having first received a brief training at the Army's 1,500-acre farm colony in Essex.

Bombay's memorial to King George V, an infirmary for destitute incurables, opened in March by the Governor, Sir Roger Lumley, is under the management of the Salvation Army. Other extensions of the year include the opening of a People's Palace in Newcastle, New South Wales; a new bureau for social service in Brussels; the erection of a modern, seven-story building accommodating several branches of social work at Helsingfors, Finland, on a fine site given by the city; and a well-equipped general hospital for natives at Toeren, Java, where for many years Army nurses have tended their patients in very inconvenient wooden huts.

The Belgian Congo, Malaya, and the Philippine Islands each published their first *War Cry* this year, while Brazil introduced a Japanese *War Cry* in addition to those already published there in Portuguese and German. (A. G. C.)

During 1938, at the 2,073 American centres of work, an evangelical and emergency relief programme of extraordinary dimensions occupied the time and attention of Salvationists, who found little diminution in the demands made upon them by sufferers from unemployment and kindred social ills. Seventy thousand converts were recorded by the organization during the year; 716,536 indoor meetings and

153,942 open-air gatherings were conducted, 4,681 officers and cadets direct the activities of the organization throughout the country. There are 40,582 local officers and bandsmen; of 1,987 inquiries received by the Missing Persons Bureau, 727 individuals were located.

An important phase of the organization's many-faceted programme is its character-building activity, carried on through special departments which provide young people with suitable companionships, social programmes, helpful class work, and meetings for their development.

The Salvation Army work in America is divided into four territories: Eastern, with territorial headquarters in New York, Central, with headquarters in Chicago, Southern, with headquarters in Atlanta; and Western, with headquarters in San Francisco A commissioner is in charge of each of these territories, while a national headquarters in New York under a national secretary serves to unify the work of the country.

SAMOA, WESTERN. The former German Samoan Islands are now administered under mandate by New Zealand. The territory comprises the islands of Savaii and Upolu with certain small adjacent islands

Area and Population :
Area 1,133 sq. miles
Population (est. Mar 31, 1938) 57,759 (Europeans 397).
Chief Town (cap.) Apia (Upolu)
Administrator (acting). Mr. A. C Turnbull
Production (export figures) 1937 :

Copra	13,340 tons	(£199,747)
Cocoa	1,253 ,,	(£71,138)
Bananas	6,706 ,,	(£70,446)

Overseas Trade 1937 :

Imports, merchandise	£267,868
Exports ,,	£352,436

Finance :

Revenue (1937–38)	£139,450
Expenditure (,,)	£139,070
Public Debt (Mar. 31, 1938)	£112,195

Education 1937–38 :
Mission schools 348; scholars 17,318
Administration Grade II schools 78; scholars 10,299.

SAMPSON, HENRY WILLIAM, South African politician, was born in London on May 12, 1872, and died at Capetown on Aug. 6, 1938. Sampson went to South Africa in 1893, and there founded the South African Typographical Union, of which he became president in 1903. He was elected to the Transvaal parliament in 1907, and continued as a member of the Union parliament until, in 1933, he was defeated after the coalition of the South African Party with the Nationalists. Sampson was Minister for Posts and Telegraphs and Public Works in General Hertzog's cabinet from 1928 to 1933, was South African delegate to the International Labour Conference at Geneva in 1925 and 1927, and in 1927 was delegate to the Dominion Labour Conference in London.

SAN FRANCISCO, California, U.S.A., central port, financial and marketing centre of the Pacific coast, known as the "City by the Golden Gate"; area, 44·82 sq. miles; population (1930 census), 634,394, (estimated Jan. 1, 1939) 761,654. The mayor in 1938 was Angelo B. Rossi, a native Californian.

Amicable relations between employer-employee groups were fostered during 1938 by round-table discussions. A solution of strikes tying up the larger retail stores and the warehouses was effected on a basis of industry-wide contracts.

World-wide interest centred upon Treasure Island in San Francisco Bay, site of the 1939 Golden Gate International Exhibition, as extensive modernization activities prepared the city for the 4,000,000 visitors expected during the Fair year.



Keystone]
SAN FRANCISCO BAY, SHOWING CONSTRUCTION FOR THE WORLD'S FAIR IN PROGRESS ON TREASURE ISLAND

Efforts to revive the shipbuilding industry on the West coast were successful when the Maritime Commission awarded a $5,715,520 contract for the construction at a San Francisco Bay dry dock of two freighters of the C-3 type. The city was made the home port for the new American President Lines offering round-the-world steamship service It is the terminal of three Class 1 railroads and a number of short lines. Pan-American Airways signed a lease on Treasure Island as a base for the clipper planes flying to the Orient, via Hawaii and the Philippines

Wholesale trade amounted to nearly $1,250 millions in 1938, ranking San Francisco first on the West coast and fifth in the nation as a market centre.

SANITARY ENGINEERING: *see* PUBLIC HEALTH ENGINEERING.

SAN MARINO, a small republic, of 38 sq. miles area, in the Apennines, S.W of Rimini, entirely surrounded by Italian territory, is ruled by a Grand Council and two Regents ("Capitani Reggenti") appointed therefrom to exercise executive powers. The population (1932) was 13,950, giving a density of about 330 per sq. mile. The capital (of the same name) has about 2,000 inhabitants. Building-stone and wine are exported: there is an electric railway to Rimini. Italian currency is in use, but there is a local silver coinage, and a separate issue of postage stamps.

SANTO DOMINGO: *see* DOMINICAN REPUBLIC.

SÃO TOMÉ: *see* PORTUGUESE GUINEA.

SARAWAK. An independent state in the north-west of the island of Borneo (*q.v.*), under the protection of Great Britain and forming part of the British Empire. The chief agricultural products are rice, sago, and maize: rubber, oil, and gold production are of considerable value.

Area and Population :
Area *c.* 50,000 sq. miles.
Population (est. Dec. 31, 1936) 450,000 (Malays, Dyaks, etc., *c.* 350,000; Chinese, *c.* 100,000; Europeans, 390).
Chief Town (cap.) Kuching (pop. 25,000).
Ruler. H.H. Sir Charles Vyner Brooke, G.C.M.G. (Rajah).
Language (official). English.
Religion. Mohammedan, Buddhist.
Production 1937 (export figures) :

Rubber	$17,281,766	Liquid fuel	$4,978,094
Sago flour	$1,170,960	Benzine	$1,873,998
Gold	$1,161,066	Kerosene oil	$928,319

Overseas Trade, merchandise 1937 :
Imports $22,899,415 , Exports $32,691,247
Roads : metalled 101 miles.
Finance 1937 :
Revenue (actual) . . . $4,801,236
Expenditure (actual) . . $4,104,082
Currency : Straits dollar ($) = 2*s* 4*d*

SASKATCHEWAN. The principal event of 1938 in Saskatchewan was the general election, held on June 8 At the dissolution the Liberals, under Mr Patterson, held 50 seats out of the 55 in the Legislature, the others being held by Co-operative Commonwealth Federation (Labour) members A feature of the election campaign was the appearance for the first time in Saskatchewan of the social credit party, under the leadership of Premier Aberhart of Alberta, which put 41 candidates in the field. The Federal government, however, made a firm stand, Liberal speakers were sent from Ottawa, and a Federal minister took charge of the campaign. The Dominion government, he announced, contemplated a $50 millions programme of urban and rural housing, and to controvert Mr Aberhart's allegation that Ottawa was under the control of the bankers it was revealed that the Federal government intended to buy out the private shareholders of the Bank of Canada and make it a purely State-owned concern. Packed meetings heard the Albertan premier set forth his $25 a month for all policy and his plan for a western social credit block of provinces, and then "on to Ottawa" No less than 157 candidates were nominated for the 50 seats, but the final results were a victory for the government They gave the Liberals 36 seats (14 down), the C C F. ten (five up), Independents two (two up), Social Credit two (two up), and Conservatives none.

The series of calamitous droughts which had turned huge areas of the south-west of the province into a desert and necessitated huge expenditures on migration and relief and corresponding increases in the public debt, ended in the spring. The wheat crop for 1938 was 132 million bushels (37,000,000 in 1937) ; oats 90,511,000 (22,338,000 in 1937) ; and barley 20,519,000 (5,518,000 in 1937) The Dominion Government has continued its programme under the Prairie Farm Rehabilitation Act in an attempt to prevent a recurrence of drought over extended areas.

In October the Saskatchewan section of the United Farmers of Canada, known as a section for their radicalism, passed a resolution at their Saskatoon convention ordering the directors to "prepare authoritative material on the establishing of a western autonomous state within the British Empire, governed by a single western government". Neither the western Press nor Ottawa officials took the secessionist resolution—similar proposals had often been mooted before—very seriously, interpreting it as a sign of the farmers' embitterment at the continuance of low prices and fiscal policies designed to satisfy the industrial east.

Area and Population :
Area 251,700 sq. miles.
Population (est 1937) 939,000 (Indians 15,268).
Chief Towns (pop. 1931 census) : Regina (53,209), Saskatoon (43,291), Moose Jaw (21,299).
Premier. Hon. W. J. Patterson.
Production :
Field crops (1937) $52,187,600
Dairy produce (1937) $16,281,700
Minerals (1936) $6,970,397 (cadmium, 111,749 lb. ; copper, 14,971,609 lb. ; gold, 48,981 fine oz. ; silver, 642,497 lb. ; zinc, 27,692,869 lb. ; coal, 1,020,792 tons).
Minerals (total value 1937) . . . $10,280,180
Water Power, Jan. 1, 1938, developed . 61,035 h.p.
Manufacturing Industry 1936 :
Establishments, 694 ; capital, $42,055,557 ; employees, 5,782 , gross value of output, $51,604,510.
Communications and Transport :
Roads (April 30, 1937) total 154,350 miles (earth 151,748 miles)
Railways (Dec 31, 1936) . . . 8,624 miles
Motor vehicles licensed (Dec 31, 1936) : cars, 75,727 ; commercial, 18,636 ; buses, 64 , cycles, 365.
Finance :
Revenue, ordinary (1935–36) . . . $17,838,692
Expenditure, ordinary (1935–36) . . $18,890,607
Debt, gross bonded (1936) . . . $124,446,374
Education, controlled schools (1936) scholars 217,247

SA'UDI ARABIA : *see* ARABIA.

SAVAGE, MICHAEL JOSEPH (1872–), New Zealand statesman, prime minister of the Dominion since Dec. 1935 (see *Ency. Brit Book of the Year*, 1938, where his earlier career is detailed), being the first member of the Labour movement to hold that position.


Press Portrait Bureau]
MR M J. SAVAGE

Mr. Savage, who was made a privy councillor in 1936, was again returned to power with a large majority at the general election of Oct. 1938, and retained his offices as minister of external and of native affairs, of broadcasting, and of certain other departments, as well as that of prime minister. In a broadcast speech after the election, while asking for the goodwill of the opposition, he said that the one objective of his government was "to give everybody a fair deal, and to make life generally brighter, more purposeful, and more serene".

During 1938 Mr. Savage continued his policy of raising wages, extending the pension schemes and other social services, improving the condition of the small farmers, and widening the State control of production, with generally satisfactory results. During the Czechoslovak crisis he assured the British prime minister that New Zealand stood unswervingly behind Britain in all eventualities, and at its close sent a message trusting "that the basis of settlement would prove a lasting safeguard to a world peace founded on justice and order between nations".

SAVINGS BANKS. Since the close of the World War the savings movement, which, in Great Britain, had become organized on a national basis in 1916, has attracted to its ranks many thousands of public-spirited men and women who recognize that work on its behalf is a valuable form of service ; and over and above the achievement of saving more than £1,470 millions of the "little man's"—and woman's—money, the National Savings Movement helps to foster those qualities of self-reliance, self-discipline, and self-respect which are the foundations of individual character and national strength. It is also actively assisting the campaign for holidays with pay by helping employers to establish holiday savings clubs, and in other ways.

The movement is organized and governed by the National Savings Committee, a voluntary body appointed by the Treasury and under the presidency of Sir Robert Kindersley, G.B.E., a high financial authority and a director of the

Bank of England, with Lord Mottistone, a former cabinet minister, as chairman. Its executive work is carried out by an official Civil Service staff, and through its National Savings Groups (now numbering over 43,500) encourages and provides facilities for the weekly saving of small sums in works, clubs, schools, etc , such sums being banked in the Post Office, or a Trustee, Savings Bank, or invested in National Savings Certificates. Of these organizations the Post Office holds about 46, the Savings Certificates 35, and the Trustee Banks 19 per cent of the total savings. To arrive at an estimate of the savings of the small investors of Great Britain as a whole we add to the £1,470 millions mentioned the funds held by building, co-operative, and friendly societies, national and industrial insurance, railway savings banks (about £28 millions), trade unions, unit trusts, etc., and arrive at a total of about £3,200 millions, or nearly 43 per cent of the entire National Debt.

The National Savings Movement's returns for 1938 show that, in spite of the indifferent trading conditions prevailing during most of the year, a steady increase in savings has been well maintained ; the following table gives the figures for this and recent years :

	In Millions £ as at Dec. 31				
	1934	1935	1936	1937	1938
POST OFFICE SAVINGS BANK :					
Deposits . .	355	390	432	471	509·3
Govt. Securities held for depositors .	176	170	165	166	165·7
TRUSTEE SAVINGS BANKS :					
Deposits . .	95	108	120	131	142·4
Special Investment Dept. . .	87	90	92	93	96 5
Govt. Securities held for depositors .	37	36	36	37	38·3
NATIONAL SAVINGS CERTIFICATES :					
Principal remaining invested . .	390	391	390	386	382·1
Accrued interest (est.) . .	98	107	122	129	136·1
NATIONAL SAVINGS MOVEMENT TOTALS	1,238	1,292	1,357	1,413	1,470·4

At the end of 1938 there were 11 million depositors in the Post Office Savings Bank ; during the year their deposits amounted to £144·5 millions, and withdrawals to £117 millions, the total standing to their credit, including government securities, being (as shown in the table above) about £675 millions. As an example of the steadiness and sanity of the small investor it is interesting to note that in the crisis week of September, while withdrawals amounted to £3,100,000, deposits totalled £3,500,000, the averages being £2·25 and £2·78 millions respectively.

The sale of National Savings Certificates during the year amounted to over 91 millions, bringing the total issue (excluding conversions) since their inauguration in Feb. 1916, to 1,403,777,535 with a cash value of £1,102,320,238.

The funds of the Trustee Savings Banks show an increase during the year ended Nov. 20, 1938, of £15,846,920, the highest ever recorded ; cash deposits have risen by £14,154,687, and there was an increase of £1,248,969 in the government stock held for depositors. The combined surplus funds of the banks now exceed £10,148,000, which, added to the items listed in the table above, brings their total funds to over £287,300,000, an increase of nearly £15,850,000 on the previous year. The banks numbered 101 as against 102, two amalgamations having taken place while one new bank was opened ; branches increased by 32 to 680 ; and the number of accounts (including stockholders) went up by over 124,000, the total now being 3,833,761.

United States. On July 1, 1938, the total assets of the mutual savings banks in the U.S.A. were $11,527,000,000, an increase of $40,400,000 during the year. Deposits credited to 15,129,874 accounts reached a total of $10,167,000,000, and the combined surplus was $1,314,000,000, or 12·90 per cent of total deposits. Dividends averaged 2¼ per cent, a decline of ¼ per cent from the rates prevailing in 1937. The number of banks declined to 543 ; five banks were absorbed by mergers ; one bank that was found not to be fully mutual was dropped from the list of reporting banks ; one bank liquidated voluntarily ; and one bank was closed by order of the Federal Deposit Insurance Corporation. This last bank was the first savings bank to be so closed. In 1938, a complete recodification of the laws of New York State relating to savings banks was accomplished, the most important changes relating to real estate and mortgages.

An event of nation-wide interest to the savings banks was the introduction of a savings bank course at the Rutgers University Graduate School of Banking, which is sponsored by the American Bankers Association. Over 600 banker students were enrolled in the various courses in this school during 1938.

SCANDINAVIAN LITERATURE. In Sweden, the book market has been largely dominated in recent times by the " proletarian authors ". Of late, however, there has been greater silence in these quarters, probably because the events taking place elsewhere in the world have made the conditions in a democracy like Sweden appear less distressing, and its culture less suspect. In 1938 the most important book from this camp was *Nattövning* (" Night Manœuvre "), by Eyvind Johnson, mainly a satirical fantasia, written with real bravura, on the antics of the home-made Nazis in Sweden. Among autobiographical novels published in 1938, *I livets var* (" In the Spring of Life "), by Agnes von Krusenstjerna, who is considered by many to be Sweden's foremost middle-aged novelist, continues her keen-eyed and poetically sensitive description of the vicissitudes of a noble family during the period (pre-war) of the decline of the Swedish gentry, and *Det var en tjusande idyll* (" It Was a Charming Idyll "), by Gustaf Hellström, outlines the currents of thought within young literary circles at the beginning of this century.

For the rest, a clear change of front from experiments in form to solid realism is noticeable. Thus the novels which, apart from those mentioned above, had the greatest success, were two powerful, tragic descriptions of real life among the peasantry, *Ellida från gårder* (" Ellida from the Farms "), by Irja Browallius, and *Spelet på Härnevi* (" The play at Härnevi "), by Berit Spong.

A similar tendency is noticeable within poetry. Gunnar Ekelof, the foremost Swedish surrealist, has written the poems in his new book *Köp den blindes sång* (" Buy the Blind Man's Song ") more conventionally. And in *Goggles* Nils Ferlin seeks the prototypes for his harsh and compassionate poetry amongst the down-and-outs of the big towns. In drama, nothing noteworthy was produced.

In Denmark, on the other hand, the most important creation was a play, *Han sidder ved smeltediglen* (" He Sits by the Melting-pot "), by Kaj Munk, a clergyman, in which an unworldly old professor, who credulously believes that

everything the Fuhrer does is right, awakens to realization of what is really happening around him and rebels against what he has hitherto venerated most. The piece has had great success both in Copenhagen and Stockholm.

Otherwise Danish literature had not very much to offer in 1938; practically no poetry and only a few novels Among these are: *Hvordan i morgan?* ("And how Tomorrow?"), by Leck Fischer; *De uønskede* ("The Unwanted"), by Aage Dons, and an autobiographical novel from the Dutch East Indies, *Rejse til Insulinde* ("A Journey to the East Indies"), by Johannes Wøller.

In Norway the year 1938 produced an abundant crop, especially of novels. Among the older authors, Johan Bojer published *Kongens karler* ("The King's Men"), a high-spirited picture of military life in 1905. Olav Duun, who for years has been the Norwegian candidate for the Nobel prize, describes in *Menneskene og makten* ("The Men and the Power") the irruption of a huge flood in one of the fiords. Most of the younger Norwegian novelists are at least as radical as their Swedish contemporaries But by birth and education they mostly belong to the bourgeoisie. This is the case with Nordahl Grieg, whose great novel *Ung må verden ennu vaere* ("Young Must the World Still Be") attacks the intellectual humanism of Western Europe. Lately, however, social and political preoccupation has seemed less dominant. Thus, Arthur Omre's *Kristinus Bergmann* is a psychological novel of crime, rather than a social study. *Brudulje* ("Kick-up") too, by Aksel Sandemose, is before all a journey into the author's own dolorous past. Sigurd Hoel's *Sesam, Sesam,* however, is a mischievous and brilliant caricature of official Norway.

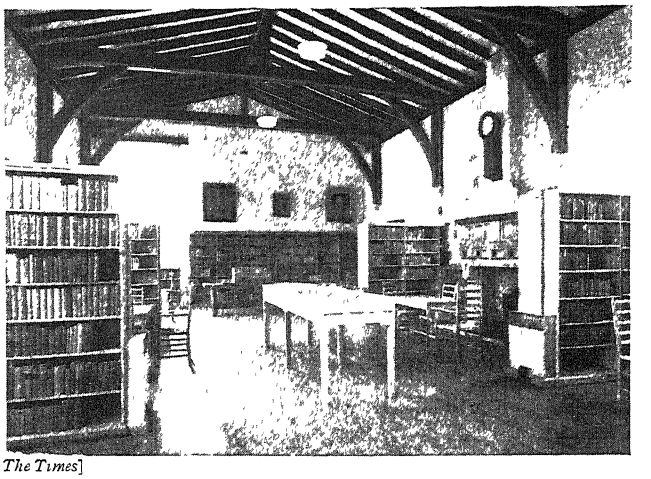
Several of the best Norwegian novels of 1938 have no tendency. Among them is Sigurd Christiansen's *Det ensomme hjerte* ("The Lonely Heart"), a profound, if a little heavy-handed, analysis of how a young boy awakens to the consciousness that he is an artist; Andreas Markusson's *Han som kjempet mot mørkret* ("He Who Fought Against the Dark"), a story whose chief character is "The Lapland Apostle", the Swedish clergyman and botanist, Lars Levi Laestadius; and above all, Gunnar Larsen's witty, entertaining *Bull,* a tale of mischievous chance and missed opportunities.

On the border-line between novel and memoirs stands Herman Wildenvey's *Den nye rytmen* ("The new Rhythm"), in which Norway's most popular poet tells of his early years. Altogether outside fiction is Fredrik Paasche's *Landet med de mørke skibene* ("The Land with the Dark Ships"), a fascinating description of the history of Norway during the Viking times. In poetry and drama in 1938, Norway produced nothing of importance. (S. S.)

SCARLET FEVER: *see* INFECTIOUS DISEASES, ACUTE.

SCHOOL LIBRARIES. Libraries in junior and senior high schools in the United States and in public secondary schools in Great Britain have made considerable progress in recent years, following the recommendations issued by the U.S. Office of Education (*The Secondary School Library,* by B. Lamar Johnson, 1932), and by the joint committee of the Carnegie United Kingdom Trust and the Board of Education (*Libraries in Secondary Schools,* 1936). In 1937, a sub-committee of the County Councils Association confirmed generally the recommendations of the Carnegie Committee.

In both countries it is recognized that the library occupies an essential place in the school. In America the function



The Times]

THE NEW LIBRARY AT THE KING'S SCHOOL, CANTERBURY. THE STRANGERS' HALL, OPENED BY SIR HUGH WALPOLE, FEB. 1938

of the library is defined as a group of activities directed towards enrichment of the curriculum, training in the use of books, and assistance in the choice of vocational and recreational reading. In Great Britain special emphasis is laid on the critical use of books for study and research and the development of the reading habit. In furtherance of these objectives many schools have encouraged the adoption of individual reading programmes followed by the writing of essays. The use of project methods or library periods, in which either the individual or a group undertakes the working out of a theme by utilizing the resources of the library, is also widespread.

It follows that the selection of books, periodicals, and pamphlets for the school library should not only respect the various subjects of the curriculum, but should envisage non-curricular interests, and should include material on hobbies, careers, social and economic problems, and reference books of every kind. Most American libraries possess files of non-book material, *e.g.* pictures, clippings, and pamphlets on topical subjects, and material for debates. Libraries are provided by the school authorities and financed on a *per capita* basis. In Los Angeles the library appropriation for new high schools is $3,000 for the first year and $2,000 for the second, with a subsequent annual grant of $750 for junior schools, with an average daily attendance of less than 1,000, and $1,000 to $1,800 for senior schools. In Great Britain library grants are generally very much smaller, but the figure recommended by the Carnegie Committee was 3*s.* per head per annum in a school of 300 pupils Both provided and non-provided schools sometimes supplement the grants by seeking gifts of books from parents and pupils and by securing a share of tuck-shop profits. In Norway the state bears half the cost of school libraries, but in some Continental countries, *e.g.* Holland, pupils pay a subscription.

Many of the English non-provided (public) schools and the most recently built provided secondary schools have specially designed and well-equipped library rooms. Outstanding recent examples are those of Bembridge School, I.O.W.; King's School, Canterbury, and Lady Eleanor Holles School, Hampton. The Southern Association of Colleges and Secondary Schools of the United States recommends the provision of seating accommodation for one-tenth of the pupils, allowing 25 sq. ft. per reader. The Carnegie Committee recommends that a day school library should be large enough to accommodate one form or class at a time, allowing 35 to 40 sq. ft. per pupil.

Present-day opinion tends towards the elimination of ·m libraries except for recreational reading, and insists the centralization of all activities in one organization any schools use one of the standard classification schemes)ewey, Bliss, or Library of Congress). The Cheltenham heme, specially worked out for schools, has been adopted many British schools.

Several American universities and training colleges offer)ecial courses in school library work, *e g.* Pittsburgh, eabody College (Nashville), and Columbia For teacher-brarians the American Library Association regards six ionths' full-time instruction in library work as a minimum 1 Great Britain summer schools of training have been held t Oxford and Bedford, and short courses are offered at Iniversity College, London.

Library service to elementary schools is generally organized y the local education committee ; the committee either upplies collections of books from a central pool or contracts ıth the local public library committee for a similar service. Iany British and American public libraries have depart-ıents specially organized for service to schools In rural chools the place of the school library is often taken by the ounty library centre, which combines the service of both hildren and adults

BIBLIOGRAPHY : M Cant, *School and College Library Practice*, ondon, 1936 , Incorp Assoc of Assist Masters , *Guide for School Librarians*, Oxford, 1937 , L. F. Fargo, *Library in the School*, Chicago, 1933 ; *Preparation for School Library Work*, N.Y., 1936, and the periodicals : *School Activities* (American) nd *School Librarian* ; *School Library Review* (British).

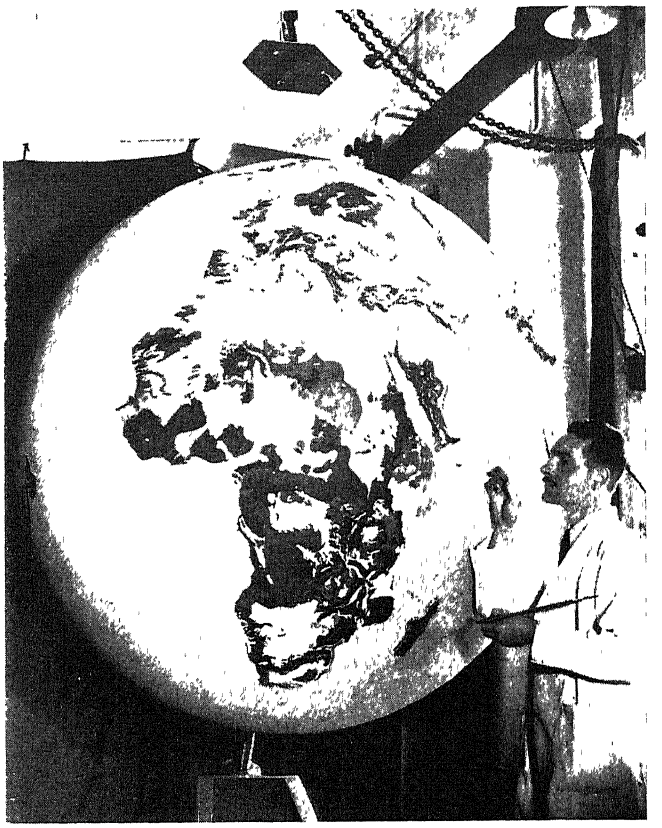
(J. D. C.)

SCIENCE MUSEUMS. The Science Museum, South Kensington, London, is handicapped by lack of space, but plans for its extension have been made. In 1938, Mr. W. E. Miller presented a large collection of portable sundials, astrolabes, and clocks, which included a combined astrolabe and sundial made for Bishop Julius by Johannes Bonius in the sixteenth century. Professor E. O. Lawrence, of the University of California, lent the cyclotron built in 1931 by himself and Livingstone. Sir Frederick Maze, inspector-general of Chinese Maritime Customs, presented a unique collection of models of Chinese junks and sampans made by Chinese craftsmen, showing accurately the design and finish which have persisted unchanged, except in minor details, for over a thousand years. The trustees of the Science Museum presented to the Liverpool City Museum a fully-rigged model of an East-Indiaman of 1830. It is an original builders' model, and search is being made to find the name of the ship.

Among the exhibitions at the Science Museum opened during the year were one illustrating the uses of science in the Army, opened in November by the Minister for War, and one on electrical illumination which was attended by more than a quarter of a million people.

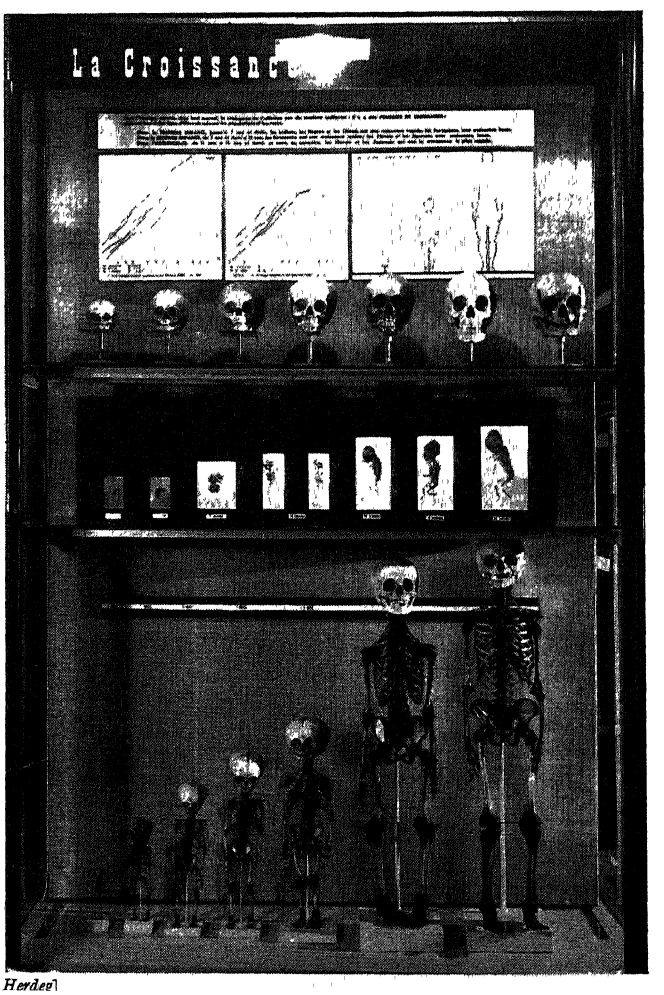
The History of Science Museum, Oxford, which is housed in the Old Ashmolean, issued an appeal for financial help to provide new quarters. The Vice-Chancellor of Oxford University unveiled a window there commemorating the gifts to the Museum of the Mercers', Grocers', and Merchant Taylors' Companies, the Royal College of Physicians, and the Friends of the Old Ashmolean.

A bill was presented in parliament to legislate for the acceptance of Tring Museum. If the bill passes, this will be the largest single benefaction the British Museum has ever received.



Fox Photos]

THE SOUTH KENSINGTON GEOLOGICAL MUSEUM'S NEW 6-FT. GLOBE, WITH MR KEEFE DOING THE GEOLOGICAL COLOURING



Herdeg]

weeds was installed at the Somerset Farm Institute, Cannington

British Empire. The Rev. Father Gathy, of the Roman Catholic Mission at Fort Simpson, presented to the National Aeronautical Museum at Ottawa, Canada, an aeroplane propellor which was contrived from oak sleigh boards and glue made from moose, by the 1921 air expedition to the Mackenzie River, when the expedition's proper propellors were damaged Mr C J Gabriel, honorary conchologist of the National Museum, Melbourne, Australia, wrote the second of a series of handbooks published by the Field Naturalists' Club of Victoria. The book, *Victorian Sea-Shells, a Handbook for Collectors and Students*, was illustrated by Miss Joyce K. Allan, assistant conchologist of the Australian Museum at Sydney

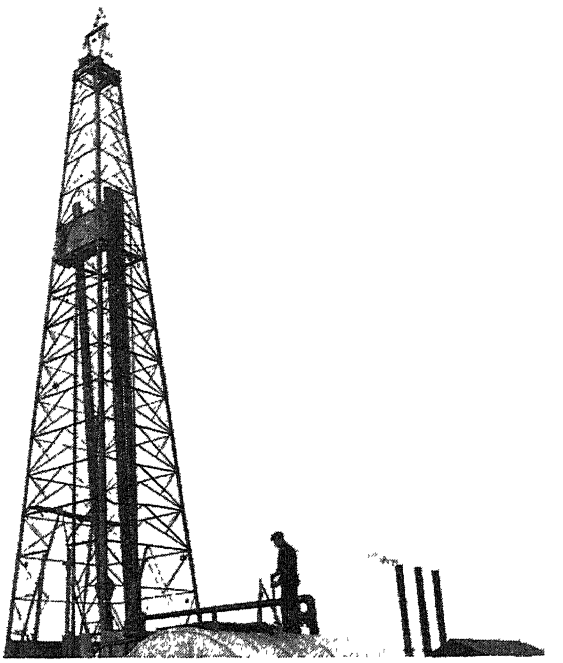
At Zimbabwe, Africa, a museum was founded especially to display antiquities from the Zimbabwe ruins The Palestine Museum was opened at Jerusalem in January.

Europe. The Italian government decided to convert the late Senator Marconi's yacht " L'Elettra " into a floating radio museum. At Warsaw, an anti-alcohol museum was opened by the Polish Minister of Social Welfare early in the year. A new medico-historical museum in Berlin is modelled on the Wellcome Museum, London.

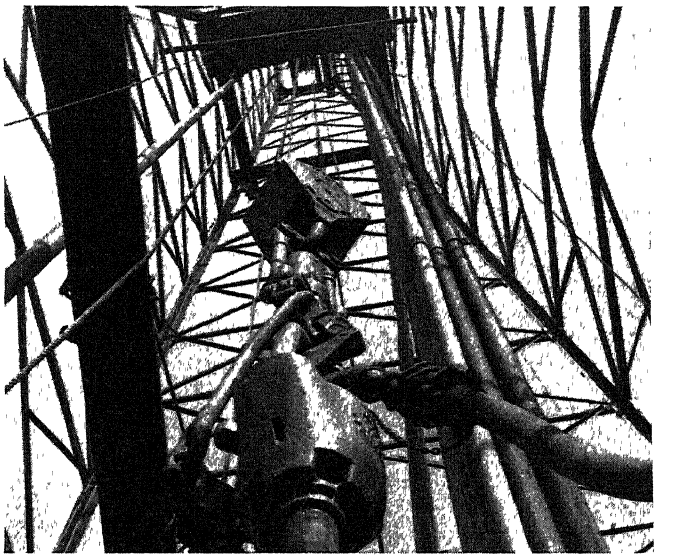
United States. An American Museum of Health is to be established in Ward's Island, New York City. A new Science Museum was opened at the University of Colorado. It contains zoological specimens, fossils, minerals, and collections representing the work of the ancient inhabitants of south-western North America. Prof Albert E. Parr, graduate of the Royal Observatory of Oslo, has been appointed director of the Peabody Museum, Yale University, succeeding Dr. Richard S. Lull. At the Peabody Museum, two important new exhibits were opened, a Hall of Man, with specimens arranged to illustrate various anthropological concepts, and a skeleton of *Comptosaurus*, a relatively small plant-feeding Dinosaur. Dr Thorne Derrell has been appointed chief of the Illinois State Museum, succeeding Arthur S. Coggeshall, who resigned to become director of the Santa Barbara Museum of Natural History. (V. R.)

SCOTLAND. Colonel D. J. Colville succeeded Mr. Walter Elliot as Secretary of State for Scotland in May, 1938. At a by-election, consequent on the death of Mr. J. Ramsay MacDonald, for the Scottish Universities, in February, Sir John Anderson (Nat. Govt.) was returned; in December he joined the Cabinet in the new office of Minister of Civilian Defence.

In August it was announced that a Scottish Home Department was to be set up to take over the functions of the existing Scottish Office, Fishery Board, and Prisons Department, its ordinary work, with that of the Department of Health and of the Board of Control, to be carried on from the new government offices in Edinburgh instead of from London. The main public events of 1938 were the International Exhibition, opened by Their Majesties at Glasgow on May 3 (*see* FAIRS AND EXHIBITIONS), and the tercentenary of the signing of the National Covenant on Feb. 28, 1638, which was celebrated by ceremonies at the Greyfriars Church, Edinburgh, where the original Covenant was signed, and elsewhere. Considerable progress was made with the £6 millions scheme for reconstructing and modernizing roads in the Highlands, the work in Caithness being completed, and the schemes for Argyll, Sutherland, Inverness, and Ross and Cromarty being pushed forward. Nine new oil-wells



GENERAL VIEW OF DRILLING RIG OF " MIDLOTHIAN NO. I ", DALKEITH

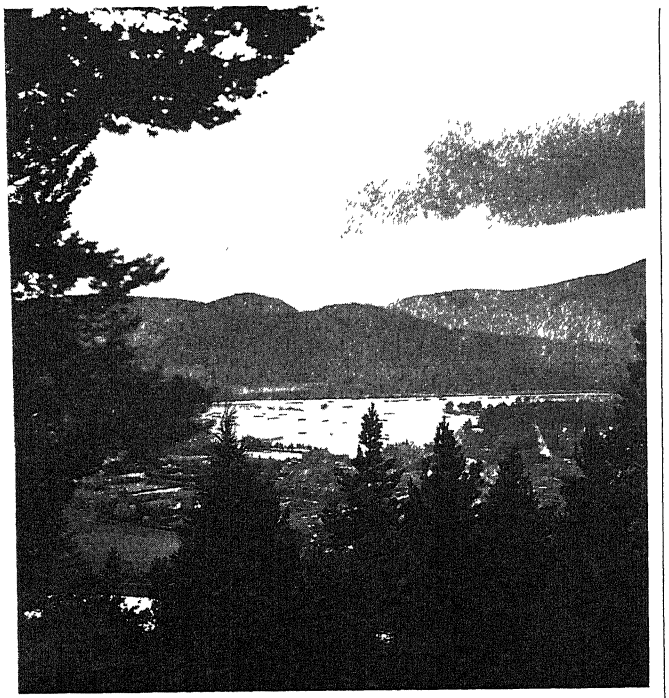


THE DERRICK, SHOWING SWIVEL, HOOK, AND TRAVELLING BLOCK



Illustrated]

LOWERING THE DRILLING BIT INTO THE WELL. MIDLOTHIAN NO. I WAS STARTED OCT. 30, 1937; BY MAY 1938 3,857 FT. WERE DRILLED; BY OCT. 21 COMPLETED, YIELDING 350–500 GALLONS A DAY OF 1ST QUALITY CRUDE OIL. NO. 2 WAS TO BE FINISHED EARLY 1939. NO. 3 TO BE STARTED APRIL 1939.



Fox Photos]
TYPICAL SCOTTISH SCENERY: BALLATER

are being sunk by the Anglo-American Company at Dalkeith.

Area and Population :
Area 30,406 sq. miles.
Population (est. June 30, 1938) 4,985,300.
Chief Towns (pop. Sept. 1938): Glasgow (1,126,000), Edinburgh (469,700), Dundee (178,692).
Language. English. 2·84 per cent speak Gaelic.
Religion. Presbyterian mainly; Roman Catholics *c.* 610,000.

Production :	1938	1937
Wheat, tons	104,000	112,000
Barley ,,	98,000	79,000
Oats ,,	633,000	666,000
Potatoes ,,	918,000	922,000
Sugar Beet (unwashed) tons	63,000	68,000
Ships launched, tons	519,649	444,196
Coal (10 months), tons	25,875,100	27,313,700

Roads 1936–37 : Class I, 6,634 miles; Class II, 3,971 miles.
Education 1937 :
Elementary (*i.e.* primary and post-primary) schools, 2,898; scholars on register, 631,669.
Secondary schools, 252; scholars, full time, 151,988.
Universities: students, full time, 9,880; part-time, 3,478

SCOTT, SIR (GILES) GILBERT, R.A. (1880–), British architect, details of whose career will be found in the *Ency Brit*, vol. 20, p 179, was president of the Royal Institute of British Architects from 1933 to 1935, and in the former year was given the honorary degree of D.C.L by Oxford University. Among his more recent works are additions to Magdalen College and Lady Margaret Hall, Oxford, the New Library, Cambridge, a training college at Putney, and churches at Luton and Golders Green. In 1937 he was responsible for the design of the Coronation decorations in Fleet Street, Ludgate Hill, Queen Victoria Street, and Cheapside, and later in the year was appointed sole assessor for the design of the new cathedral at Auckland, N.Z. In 1938 he was adviser to the executive committee in the matter of the site of the King George V Memorial at Westminster, and designed the architectural part of the Memorial, the statue itself being the work of Sir William Reid Dick, R.A.

Sir Gilbert is married, and has two sons.

SCULPTURE. Of recent years there has been a welcome increase of the general interest taken in sculpture, accompanied by a tendency to return to traditional forms. The work of the extremists still has considerable literary support, especially in France, where the *Cahiers d'Art*, in particular, is dominated by the view that Picasso is the greatest living artist, but the critics in general are less disposed to invest the ultra-modernists like Archipenko with the importance claimed for them by a small clique.

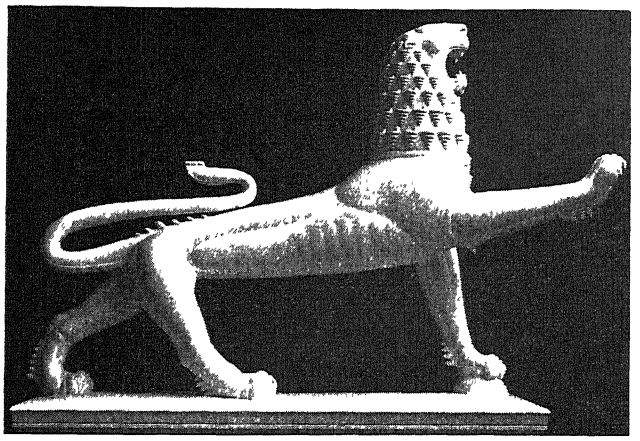
A wholesome effect of the revolutionaries can be seen, however, in a revolt from mere prettiness and over-realistic handling of form among the followers of the older tradition, as exemplified, for instance, by the work of Karl Milles and Mestrović, whose realization of the intrinsic beauty of pattern, of balance and form, and of material surface is just as high as that of those who consider that these things must be divorced from all representational quality.

The interest in sculpture in England has been evidenced by wide discussion about the country's public monuments and by the opening of the new sculpture galleries at the Tate Gallery, due to the beneficence of Lord Duveen. This is the first gallery of any importance in London to be devoted entirely to the display of sculpture, and should do much to stimulate further public interest. Greater artistic attention to memorial stones in burial grounds, once notorious as representing almost exclusively the lowest possible level of the sculptor's art, is another pleasant feature of the past year: in this connexion the names of Eric Gill and Gilbert Ledward must be particularly cited. These men and others are making a praiseworthy effort to popularize British stones, which are usually best suited to the surroundings, in place of marbles.

In general, the sculptor to-day is tending to use a far wider range of materials than his predecessors, who were with a few exceptions restricted to marble and bronze. This may be partly, but not entirely, due to the passing of the large houses of wealthy private patrons, and the coming of small flats unsuitable to the placing of pieces of any size. In consequence there is less work being done for exhibition and for private dwellings, and more for external architecture, especially on public buildings, gardens, and squares. Not only a variety of stones, including slate, are being utilized, but more unusual materials. A good example is the new frieze for the outside of the building of Messrs. Doulton, the potters, which Gilbert Bayes has executed in coloured ware. The new Norwich Town Hall offers good



THE GILBERT BAYES PANEL



THE LION FOR NORWICH BY ALFRED HARDIMAN

examples of modern British architectural work, in Alfred Hardiman's lion and James Woodford's bronze doors. The new fountains which are being designed by William MacMillan and Charles Wheeler are notable examples displaying the sound decorative tendencies of modern British work.

A great opportunity for the effective display of the sculptor's art was missed at the Glasgow Exhibition, not because of any lack of good will, but because time and funds were both inadequate On the other hand, special note must be taken of the enterprise shown by Aberdeen, where a plan to beautify the public parks with sculptural work, including fountains, has already been passed, and where sites are now being selected. Modern roads and roundabouts offer opportunities of which but little advantage has so far been taken by the authorities

Much smaller work of great charm is being carried out for open-air sites, especially private gardens, by Ferdinand Blundstone and others. It must not be suggested, however, that interior decoration is being neglected. A noteworthy feature here is the strong revival of the old British tradition of wood carving, with which the name of Grinling Gibbons will ever be connected. Prominent among modern wood carvers are W. C. H. King, H. J. Youngman, and A J. Oakley; the latter in particular having carried out work which can stand comparison with anything that the past has produced (W. R. D.)

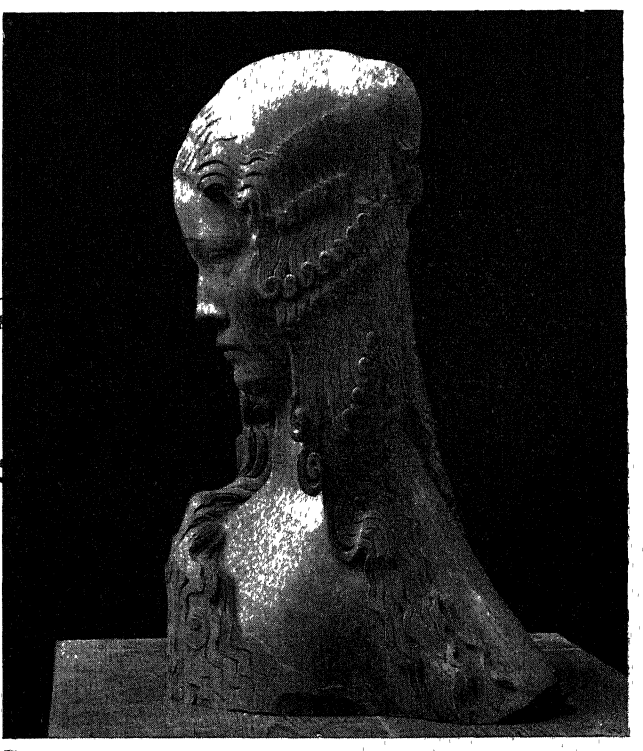


"ATALANTA" BY FERDINAND V. BLUNDSTONE, F.R.B.S.

United States. Special incentives to sculptural activity were given by the New York World's Fair and by the San Francisco Exposition, as well as by federal construction programmes, each of which was responsible for several major awards and disclosed an increasing national interest in sculpture Contests in important instances were on an open competitive basis and attracted hundreds of sculptors, who submitted work for such major projects at the New York fair as the decoration of the U S Government building, won by Harry P Camden, and that of the Metropolitan Life Insurance building, won by Thomas G. Lo Medico. In each instance the prizes were commensurate with the imposing scale of the work to be executed

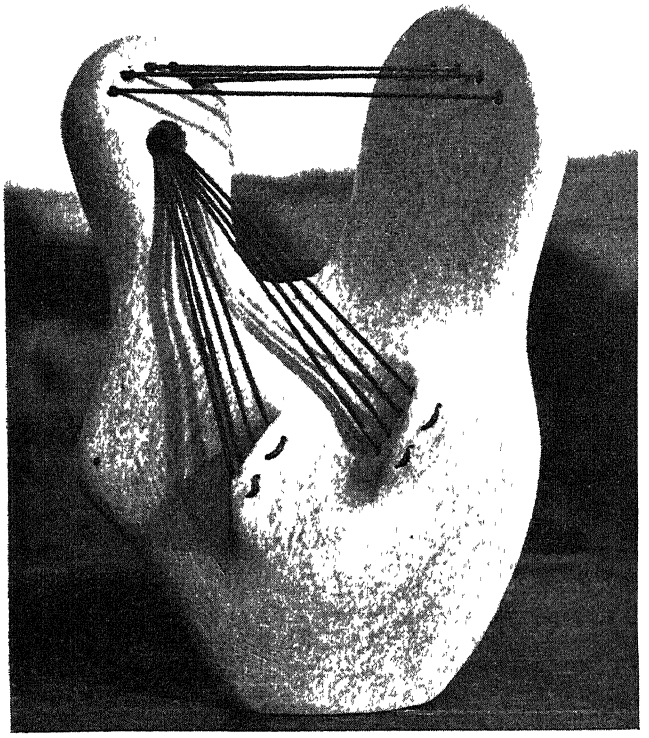
In the face of new opportunities, sculpture continued divided in its expression of the ideals of the past, as represented by the persistence of classical forms, and of the ideas of to-day, as illustrated by new concepts of sculptural form and meaning As for several years, strong trends towards realism as well as towards social commentary and criticism were perceptible, especially in the intimate work of politically conscious sculptors Sculptors were awakened to a strong sense of their potentialities as a result of the aid given by the federal art projects, new and vital talents arose under their ægis, and the volume of sculpture steadily increased.

In the exhibition field sculpture's vitality was measured by the popular response to large national exhibitions, such as the annual at the Whitney Museum of American Art in New York, which offered a selective cross-section of contemporary American work, and by regional displays stressing present-day forms held in other large cities. A newly organized group of independents, the Sculptors' Guild, gathered influential younger artists under its banner, marking its initial appearance with a well-publicized outdoor show in the heart of mid-town New York, which was abetted by public demonstrations of sculpture technique



Howard Coster]

"MALUA" BY ALFRED J. OAKLEY, F.R.B.S.



NON-REPRESENTATIONAL SCULPTURE BY HENRY MOORE, 1938

by exhibiting artists. At the same time the use of special lighting and coloured backgrounds advanced the methods of showmanship in significant indoor displays.

Prominent in the year's sculpture activity was the work on imposing national monuments and memorials Among those completed was the statue of Benjamin Franklin by James Earle Fraser which was dedicated at Franklin Institute, Philadelphia. In Washington further development of the architectural plan of the capitol provided for two monumental groups of equine subjects to be executed by Michael Lanz for the approach to the Federal Trade Commission building. In San Francisco plans for the erection of a heroic statue of Saint Francis near the outskirts of the city were formulated with the support of local civic and art authorities, and efforts were made towards the raising of the necessary funds. At the same time work on the national Mt. Rushmore Memorial in the Black Hills of South Dakota, which was begun by Gutzon Borglum in 1927, advanced to within eighty per cent of completion.

Stylistic trends involved in the sculpture of public monuments and architectural decorations continued for the most part in the traditional direction, with few examples produced to indicate a renovation of public taste in this branch of art. One of the principal exceptions noted, however, was the design by Isamu Noguchi, which was chosen by the Rockefeller Center authorities to symbolize " News " in the ornament of the Associated Press building, one of its latest structural additions.

SECONDARY EDUCATION. The constitution of the Secondary School Examinations Council has recently been modified so as to make it more representative in character. It consists of thirty members ; the teachers, local authorities, and the Examining Boards each nominating ten members. One of its functions is to act as a co-ordinating authority, and it is thereby empowered to investigate the conditions of the higher school certificate and the school certificate examinations in order to report to the Board which examinations are recommended for approval For practical purposes, what is generally known as the group system is of greatest importance in the school certificate examination. Subjects are arranged in four groups Group I, English subjects ; Group II, Languages , Group III, Mathematics and Science ; Group IV, Art, Music, Handicraft, and other practical subjects

In the past a candidate had to pass in five subjects with at least one subject at the credit level, and pass in each of the three groups I, II, and III. Thus a candidate might pass in I, III, and IV with the necessary credit, but owing to weakness in languages not obtain a certificate. Criticism of the group system has been gathering in volume for the last decade, and in 1938 the Board referred the matter to the Secondary School Examinations Council.

The Council has now reported and the Board of Education has accepted the report. The proposed solution takes the middle course. In future a candidate must pass in English Language and five other subjects, of which at least one must be taken from Group II or Group III. No credit subject is required. Thus, broadly, a candidate must offer either Group II or Group III. These regulations come into force in 1939, and all examining bodies seeking approval for their certificates must conform to them.

Another new examination problem has suddenly aroused much discussion Arising from a report from the Ministry of Labour Committee on " Holidays with Pay " came the demand for a spread over of holidays sometimes called " staggered holidays ". This means that arrangements should be made by trades or districts to spread holidays over the summer months instead of concentrating them in August This obviously affects school holidays, and these in their turn the examination arrangements. Strong claims are made that the examinations shall be taken out of the holiday track so as to free all children to go away with their parents for the annual holiday. The obvious examination times are before Easter or before Christmas, thus ending the school year at either Easter or Christmas. Accordingly, by a train of circumstances, the scheme for holidays with pay produces serious repercussions on the school and on the academic year. The advocates of change say that this is a great social reform, and that educational practice must accommodate itself to the new situation. Others claim that paid holidays will have little effect on the schools, and that the change in school arrangements is unnecessary and unwise. Though the case for change may be based on sentiment, there are times when it is difficult to reason coldly and dispassionately with reformers who can easily inflame public opinion. The psychology of the situation has, therefore, to be faced. Any change of school year is not at all welcome to the universities, though they can hardly defy public pressure for very long. Universities as well as schools are servants of the nation, and must re-examine their academic arrangements in the light of the new position. If there must be change, the preponderating opinion in the schools seems to be in favour of November examinations, thus commencing the School Year in January. Easter is generally not favoured, because it is a variable date, and also because the Lent term is the term most disturbed by sickness. The Board of Education has suggested the first fortnight of June for the examination period. This hardly appears to meet the situation, as schools would tend to break up soon after the examinations and the problem, instead of being solved, would merely be shifted from July to June. In any case, June is not outside the holiday track.

In an attempt to find a way out of this impasse, it is suggested that the examinations should be echeloned so as to free schools in different parts of the country at different times To be effective this would take the free choice of examinations from the schools, and each examining body would be allotted an examination province As with all social reforms, the gains have to be balanced against the losses. The problem demands analysis to see if the losses in efficiency in education are more than offset by the gains to the public at large. It has not yet been proved that the treatment required is such a major operation as a reconstruction of the academic year. If ultimately it is found necessary to alter the school year, then the universities must make their contribution, or the linkage of school and university would be seriously embarrassed. So far, however, the solution has been postponed by arranging the examinations at the usual times for the year 1939.

Though these examinations questions loom large, other developments are not being overlooked. The extension of greater facilities for physical training is growing apace. The home-work question has been under review, and the Board has published a pamphlet on the matter which in the main confirms the practice of regulated home-work as arranged in the best schools. The demand for leisure time and opportunities of social intercourse can be met by a properly organized home-work system, though no regulations will prevent the ambitious scholar from concentrating on his work to the exclusion of all other interests. Placement work is growing, and recently the demand for Secondary School pupils has exceeded the supply. Thus boys and girls are having better opportunities of selecting suitable work, and are not being forced, owing to pressure of competition and economic necessity to take any post offered. Some attempts are being made to regularize the relations between the schools and the employers. The schools are insisting on the private nature of school reports, and are asking employers to accept an *ad hoc* reference, which gives a better survey of the whole career of the pupil than the latest report. Some complaints have also been made of the practice of appointing boys to posts and then asking for testimonials. This is not customary with good employers, who take great care to investigate references before offering the appointment. Usually the evils of the other system have only to be pointed out for employers to recognize the unwisdom of appointing first and reference after. The employment situation is much influenced by the decline in school population. This is having its effect on the schools. In many cases schools are diminishing in size, and forms are smaller Some of the private schools are anxious about the trend of affairs, as there will soon be more boarding places than available pupils unless something is done to meet the situation. As a last resort it may mean a sharing of the pupils or, if free competition is allowed to take place, the closure of a number of schools.

Arising out of this question of the private schools, it is not generally recognized what an important part they play in the educational world. There is a large number of schools doing preparatory work for the secondary and public schools. Their range is wide, extending from the well-run preparatory school of established reputation to the small Dame's school. Many of the preparatory schools are inspected by the Board of Education, and recent figures show that over 22,000 pupils are attending these schools. There must be many thousands of others in the uninspected and smaller schools. Opponents of this system—or lack of system—would force all children through the Elementary Schools.

Leaving aside the debatable question as to whether this is desirable on educational grounds, it must be pointed out that a much more fundamental issue is at stake It is neither more nor less than freedom—the freedom of the parent to choose and pay for the education of his child. This freedom is a priceless and outstanding characteristic of Britain's national and educational outlook. The better preparatory schools are in close contact with the public schools, and have opportunities of consultation with the Headmasters' Conference One result of this co-operation is the Common Entrance Examination, which permits boys to take their examinations at their own schools, and sets a general standard of attainment which, though it varies from school to school, does safeguard the education of the boy Reforms in the examination are matters of constant discussion between the Headmasters of public schools and preparatory schools so that these latter schools are able to conform to any general advance in educational theory without sacrificing their individuality and special functions.

For the report of the Consultative Committee of the Board of Education, briefly known as the Spens report, *see* EDUCATION: GENERAL TRENDS (T. T)

United States. Organized attack on the problems of curriculum development by State and regional organizations continued in 1938, with selected secondary schools given freedom and encouragement to experiment with revised curricula. These studies, and the Regents Inquiry in New York, have stressed appropriate education for all rather than preparation for college entrance.

Increased attention has been given to the use of radio and motion pictures in the school and to planned excursions. Closer co-operation of the school with its community has been stressed, both in interpretation of the educational programme and in definite participation of the school in community improvement. A broadened concept of guidance involves conscious participation of a larger proportion of the teaching personnel. A notable contribution has been made by the Office of Education through the organization in 1938 of the National Occupational Information and Guidance Service.

A noticeable trend has been that toward implementation of research The preparation of a report on *Needed Research in Secondary Education* by a national committee represents a major contribution. The American Youth Commission, under the title *Youth Tells Its Story*, reports a comprehensive study of the characteristics and needs of youth in Maryland, chosen as a typical American State. Another significant project is the co-operative study of secondary school standards. Having devoted a period of five years to the development of a new technique for evaluating secondary schools, the staff has placed its major emphasis in 1938 on the interpretation of the instruments evolved and their application in typical school situations.

With the assumption of enlarged responsibilities and the dependence on outmoded forms of taxation, the problem of financing secondary education has assumed major importance. Through emergency grants, the Federal government has contributed to costs of school building construction. It is generally recognized that further Federal aid and reorganization of State and local tax structures will be necessary to provide equal educational opportunities to children in rural districts, and to those of less prosperous States. Studies such as the Regents Inquiry, completed in 1938 in New York, suggest a promising attack on the problems of improving and of financing secondary education.

BIBLIOGRAPHY. James F. Abel, *A Survey of a Decennium of Education in Countries Other Than the United States*, U S Office of Education Bulletin 1937, No 2; Aubrey A Douglass, *Modern Secondary Education*, New York, 1938.

SEISMOLOGY maintained progress during 1938, and there was a net gain in the number of seismograph stations While there were no spectacular major earthquakes, the submarine shock of Nov. 10 caused a moderate tidal wave in the North Pacific Ocean, and an earthquake in Belgium stirred interest through its unexpectedness

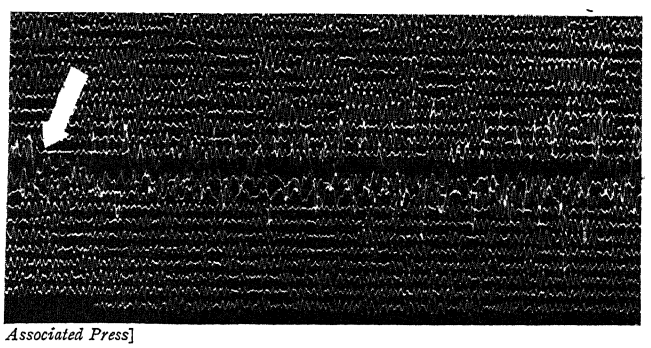
From the viewpoint of the earth's interior and crust, improvement has been made in the tables of travel time of earthquake waves, and areas have been delineated where the travel time is anomalous. Conditions beneath the sea have been studied by means of earth waves due to explosions. The relation of earthquakes to surface geological formations, especially faults, has been investigated; also the relation of volcanic earthquakes to other volcanic activity. The propagation of microseisms—small earth tremors of non-seismic origin—has been studied

Strong earthquake motion has been measured, and has been analysed by mechanical as well as mathematical methods. Information thus obtained has been applied to the design of many kinds of structures, including dams, bridges, water towers, and buildings. Models of proposed structures have been tested on shaking platforms designed to reproduce actual earth motions. Special attention has been given to the measurement of dominant periods of ground vibration to find whether these are associated with earthquake destructiveness.

Much effort has been given to the development of better seismic instruments and methods, especially directed to retaining high quality of results with reduced cost.

Little progress has been made in the determination of ultimate earthquake causes, but light has been thrown on conditions within the crust by laboratory tests of crustal materials at pressures up to 50,000 atmospheres, corresponding to a depth of 100 miles. Though general earthquake prediction is regarded as impossible, attention has been given to the possibility of determining whether stress is growing in the crust which may lead to earthquake, by means of triangulation, levelling tilt measurement, and special measurements along great fault planes.

Under international auspices the preliminary list of earthquakes for the earth as a whole is published in France and the final list in Great Britain. An excellent bibliography is prepared by Canada.



Associated Press]

PART OF THE FRANKLIN INSTITUTE'S RECORD OF THE CHILE EARTHQUAKE OF JAN. 24, 1939. THE ARROW POINTS WHERE THE FIRST WAVE REACHED THE INSTRUMENT, AT 10 HOURS, 25 MINUTES, 37 SECONDS P.M., EAST STANDARD TIME. THE RECORD READS FROM LEFT TO RIGHT. TO THE RIGHT, ON THE LINE BELOW, THE EFFECT OF THE LONGEST WAVES IS SEEN. BEFORE AND AFTER THE EARTHQUAKE ARE SEEN WAVES DUE TO MICROSEISMS. THE RECORD APPEARS TO SHOW THE CENTRE OF THE QUAKE 4,680 MILES SOUTH OF PHILADELPHIA

SENEGAL: *see* FRENCH WEST AFRICA AND THE SAHARA

SETON-KARR, HEYWOOD WALTER, British explorer, was born in 1859 and died on Jan 12, 1938. He was educated at Eton and Oriel College, Oxford, and saw four years' military service in Egypt As a big game hunter, and as a collector of artifacts, he made many exploratory expeditions in tropical Africa, the Arctic, and in India, and a great number of museums are the richer as a result of these expeditions. He was a careful worker in water-colours; and he was the author of *Shores and Alps of Alaska, Ten Years' Wild Sports in Foreign Lands;* and *Bear-hunting in the White Mountains.*

SEXTON, SIR JAMES, British Labour leader, was born at Newcastle-on-Tyne on April 13, 1856, and died at Wavertree, Liverpool, on Dec. 27, 1938 After a hard and varied life in factories and at sea, Sexton became in 1893 general secretary of the National Union of Dock Labourers, and later supervisor of the Dock section of the Transport and General Workers' Union. From this post he resigned in 1926, being granted a pension. He was a member of the parliamentary committee of the T.U.C., 1899–1923, being president of the T.U.C. in 1905, and from 1923 was a member of the General Council of the T.U.C. In 1905 he was elected to the Liverpool City Council, and from 1918 to 1931 was M.P. for the St. Helen's Division of Lancashire. Sexton was created a C B.E. in 1917, and was knighted in 1931. His publications included: *The Riot Act*, a play produced in Liverpool in 1914; and *Sir James Sexton, Agitator* (1936).

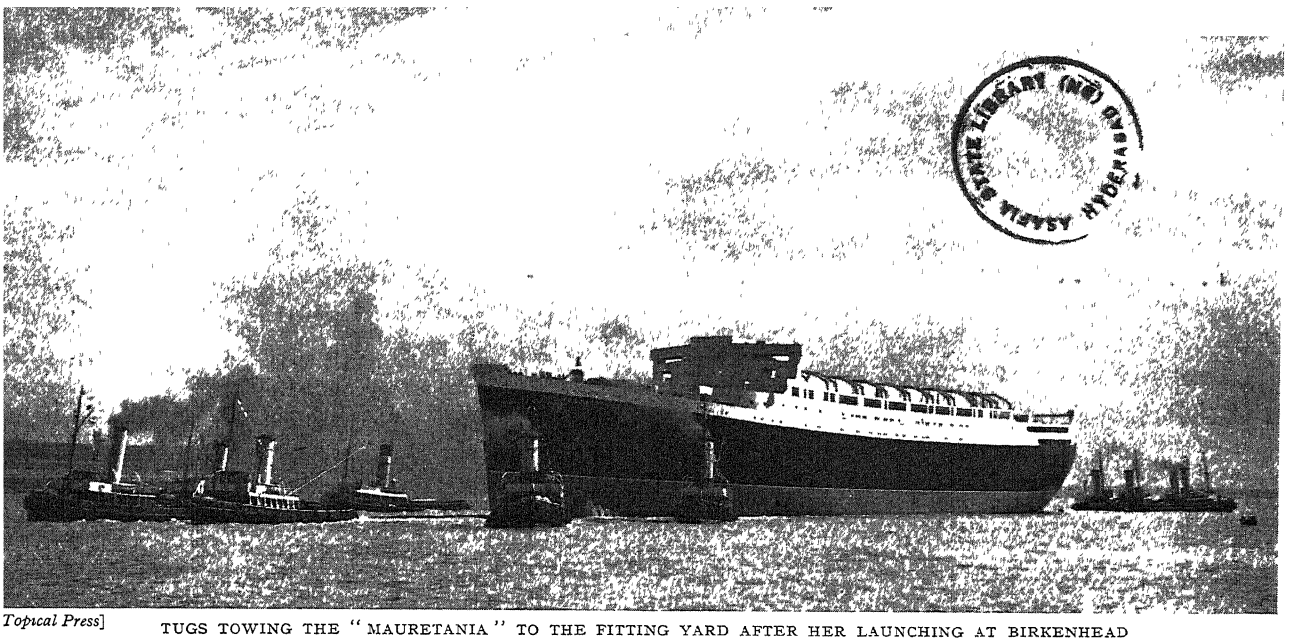
SEYCHELLES. A British colony consisting of 92 Islands in the Indian Ocean between 4° and 5° S. latitude and 55° and 56° E. longitude, with a number of smaller islands spread out to the south-east. The largest island, Mahé, is 970 miles distant from Zanzibar. During 1938, certain Arab leaders in Palestine were deported to the colony.

Area and Population:
Area 156¼ sq. miles (Mahé 55 sq. miles).
Population (est. Dec. 31, 1937) 30,940.
Chief Town (capital) Victoria (Mahé).
Governor. Sir A. F. Grimble, K.C.M.G.
Production 1937 (export figures):
Copra, 5,612 tons; Guano, 9,594 tons.
Cinnamon leaf, Rs. 318,527, Patchouli, Rs. 32,603.
Overseas Trade 1937:
Imports, total . . . . . Rs. 1,263,351
Exports, domestic . . . . . Rs. 1,503,310
Roads. 46 miles of first-class cart road.
Finance and Banking:
Revenue (est. 1938) Rs. 803,066 (recurrent Rs. 683,004).
Expenditure (est. 1938) Rs. 734,830 (recurrent Rs. 569,470).
Public Debt (Dec. 31, 1937) . . . Rs. 402,800
Notes in circulation (Dec. 31, 1937) . . Rs. 497,976
Currency: Indian silver rupee (Rs. 1 = 1*s.* 6*d.*).
Education: elementary, 26 schools; 5,648 scholars.

SHAW, TOM, British trade unionist and politician, was born at Colne, Lancashire, on April 9, 1872, and died in London on Sept. 26, 1938. He was the first secretary of the Northern Counties' Textile Federation; and from 1911 to 1929, and again from 1931 till his death, was secretary of the International Federation of Textile Workers. He sat in parliament from 1918 till 1931 as Labour M.P. for Preston, was Minister of Labour in 1924, and Secretary of State for War from 1929 to 1931.

SHIPBUILDING. In most countries where industry is independent shipbuilding has had a year of great anxiety, for while the contracts of 1937 have occupied the

SHIPBUILDING



Topical Press] TUGS TOWING THE "MAURETANIA" TO THE FITTING YARD AFTER HER LAUNCHING AT BIRKENHEAD

yards for the greater part of the year, new orders have been scarce. Declining profits would make the owners disinclined to order in any circumstances, and various factors, mostly outside the control of the shipbuilders, have forced the price up to a prohibitive level The yards of the countries where the industry is controlled—Russia, Japan, Germany, and Italy—have kept very busy, but apart from them, only Denmark and Sweden finished the year with really easy prospects apart from warship work, although in some branches the Dutch are well employed. Yet replacement programmes, overdue in many fleets, await price reduction. A very striking feature in several countries has been the modernization of existing ships, often of considerable age, to avoid new construction.

Great attention has been paid to experimental tank work, several new tanks being constructed or projected, and with the reduced number of designs sent in by builders for testing, there has been greater opportunity for original research work by the staffs. In Britain a wide range has included the paddle-steamer, which is too generally regarded as obsolete. There is a growing tendency towards standardization all over the world, and the improvement in crews' accommodation and hygiene continues, even in the smallest types.

The urgent necessity for economy, both in the construction of the ship and her running afterwards, has received full attention from the shipbuilders and their associates. In all countries pre-construction on the ground is increasing rapidly. Valuable results have been obtained from metallurgical research work, both to secure lightness with strength and to check corrosion, and experiments have continued, with considerable success, to find a sound aluminium alloy for marine work. Welding has made great progress, especially as regards reliability, and the ordering of an all-welded ship is no longer an adventure, although the weaknesses of the system are realized. Most of the all-welded ships ordered have been spirit tankers, as the rapid corrosion usually starts round the rivet-heads.

In Britain the year has been worse for shipbuilding than in any other country on account of the almost complete cessation of mercantile orders to replace the jobs being completed. Without the rearmament contracts many yards must have closed down during the year, and it is generally appreciated that purely naval work is an unsound foundation for the industry. Efforts have been made to obtain a definite statement of government policy towards the industry, but so far without success.

British shipbuilding is admittedly dearer than that of practically any country on the Continent, and quite apart from the currency regulations which help Germany, several British owners have been compelled to turn to Continental yards on account of cost, the Blue Star Line for the first time in its history. The majority of British coasters ordered during the year have gone to Dutch yards. On the repair side the costs have gone up even more than for new construction; casualty repairs often leaving no choice, have hit the underwriters very hard, but many owners have sent their repair work abroad when it has been possible.

Higher pay and holidays with pay have added appreciably to British costs, while many companies have introduced pension and life insurance schemes. The post-war reduction in the difference between the pay of skilled and unskilled labour has had a very harmful effect on the British industry by reducing the incentive to lads to undergo the necessary training as apprentices. The employers aim to overcome this disadvantage, and their relations with their labour have usually been excellent.

Shipbuilding in the United States has also been handicapped by high costs, in some cases higher than they were during the War, so that most of the new ships launched during the year were tankers designed largely for the reserved inter-coastal trade. Government aid has restarted general commercial shipbuilding after an almost complete lapse of fifteen years. Some ships have been ordered privately, but the State has stepped in with a scheme to build a number of first-class cargo liners to be sold or chartered to private owners. The price quoted by most of the yards was a surprise to the authorities, but it was partly due to a number of refinements in the design to make them particularly valuable as naval auxiliaries in war time.

Useful business is expected by the yards through the government's determination to give the Navy a reserve of fast tankers, although not so fast as the Japanese, by granting aid to cover the increased cost of the desired speed as compared with the commercially economical speed of 12½ to 13 knots. The suggestion was put forward that money might be saved by building subsidized ships in Europe, but this was defeated.

In Germany the yards have been very busy, but mostly with naval and foreign work, to such a degree, in fact, that native owners have frequently had to be content with modernizing existing ships or turning to foreign yards The historic Vulcan Yard at Stettin has been reopened largely for the purpose of training workers. In consequence of the importation of oil being against the national policy, there has been a strong tendency to turn from the Diesel to coal-burning steam machinery for coasters and short-distance traders, and striking results have been attained with producer gas engines for tugs and small craft. Japan has also returned to coal and steam for practically all short-distance ships after a period during which none but motorships were built. After the Ship Improvement ("scrap-and-build") Subsidy Law had encouraged the building of fast liners only, the serious shortage of tramp tonnage has caused concern.

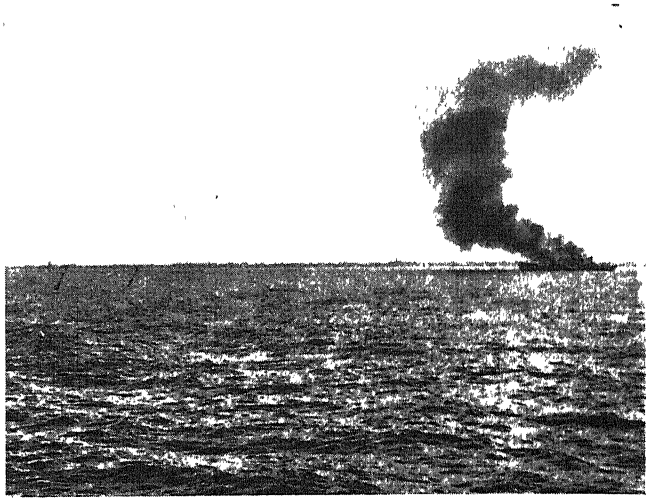
Italian yards have experienced difficulty in starting the gigantic subsidized building scheme, largely through lack of materials, but a number of foreign orders have been arranged by barter, with Sweden for steel and with Norway for fish; in spite of its cheap labour, shipbuilding has difficulty in keeping the price reasonable. In France the high price, officially estimated at 25 per cent more than in neighbouring countries, is attributed principally to social legislation, and the State is making every effort to make the subsidized companies patronize home yards wherever possible.

Turkey is to make efforts to establish a shipbuilding industry, but it will not be easy; Poland is doing the same at Gdynia. In Holland the greatest prosperity has been on the repair side and in the construction of motor coasters, which has been brought to a high state of efficiency. In Norway conditions have been very difficult, but both Swedish and Danish yards have enjoyed a very prosperous year, largely on foreign orders.

The biggest and most conspicuous ships launched during the year have been the Cunard White Star "Queen Elizabeth" (about 85,000 tons; John Brown's, of Clydebank), the Cunard White Star "Mauretania" (about 33,000 tons; Cammell Lairds, of Birkenhead), the Swedish-American "Stockholm" (about 28,000 tons; the Cantieri Riuniti, of Monfalcone), and the Cie Sud-Atlantique "Pasteur" (about 28,500 tons; the Penhoet Yard at St. Nazaire).

See also SUBSIDIES. (F. C. B.)

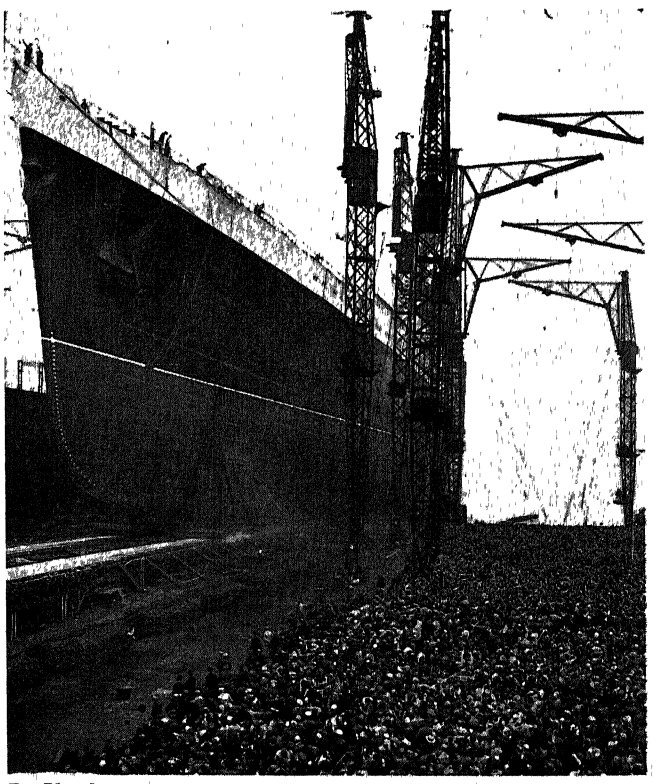
SHIPPING, MERCHANT MARINE. The year 1938 has been a very anxious one for the shipping industry in general for, the improvement in 1937 not being backed by a genuine increase in world trade, the decline in freights which had become pronounced at the end of the year was carried on, only partially checked by the minimum freight rates arranged in certain trades. The increased policy of barter between nations has increased the tendency to narrow the shipping business, but on the other hand, genuine efforts have been made in many directions, especially in the Anglo-American trade discussions. Other schemes to improve international trade, notably the unified Customs nomenclature first put forward at Geneva in 1927, have made



Fox Photos]
WAR RISKS THE "ARLON" OF CARDIFF BOMBED IN VALENCIA PORT. THE MASTS OF ANOTHER SHIP ("THORPENESS" OR "THORPEHALL") ARE ON THE LEFT

disappointing progress The declining number of tramp ships, sometimes caused by subsidies and sometimes by the trend of trade, has caused great concern in many countries, and camouflaged transfers to foreign flags for various purposes continue in spite of constant protests Numerous reasons lead to these transfers, and there have been cases of the flags which benefit by them in some respects being hard hit by them in others.

Political crises and wars have naturally had the largest influence on shipping, particularly in Europe and the Far East. In Spain, General Franco's air force has carried out a very large number of raids on merchant shipping supplying the republican ports, and although considerable losses have been sustained, and the cost of insurance has become very high, the damage done by air bombs has, in most cases, been very much less than had been anticipated, and the air menace, although of course considerable, is now treated



Fox Photos] LAUNCHING THE "QUEEN ELIZABETH"

with a greater sense of proportion In the Far East, American and European trade with large parts of China has been brought practically to a standstill, and there is grave anxiety concerning the possibility of the "open door" policy being abandoned.

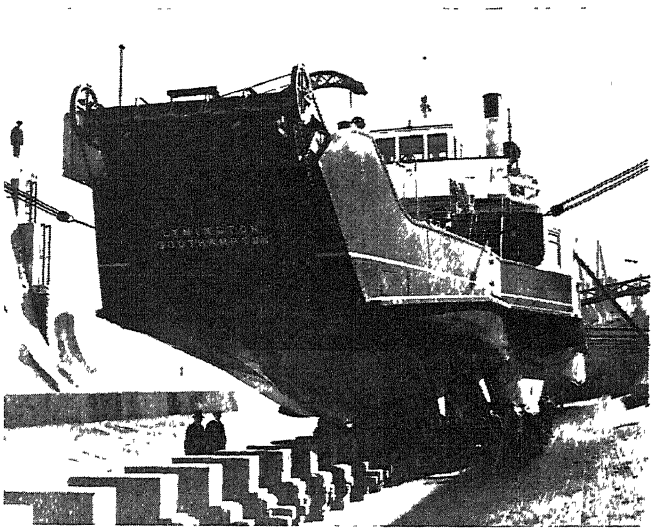
The European crisis in the autumn naturally influenced shipping All the countries which were likely to be concerned, and many in which the possibility was very remote, took steps to put their merchant shipping to national use. All German ships at sea were ordered to home ports, or friendly neutrals, by wireless, there was a westward rush by Americans in Europe which taxed the passenger facilities of the lines to the utmost, and a great transatlantic movement in gold which caused a number of unlikely ships to be pressed into the service. This trade was very severely handicapped by the state of the insurance market against war risks, and it led to the whole system being overhauled by the underwriters and put on to a more satisfactory and workable basis

The allied problems of refugees and stowaways, accentuated by the crisis, have given shipowners of all countries infinite trouble. The heavy liability of the shipowner in the case of the rejection of the refugees or the detection of the stowaways is a serious matter.

One aftermath of the crisis was to cause great public anxiety in Britain concerning the strength and state of the merchant navy and merchant seamen The great decline in the numbers and tonnage of ships, and the reduced food-carrying ability in time of war, had been realized in many quarters for some time, but the authorities had expressed their satisfaction on account of the greater carrying capacity of modern ships and the general public had been satisfied. The crisis caused a revulsion of feeling, and the Board of Trade made immediate arrangements to hold an inquiry into the reduced tonnage under the British flag. The self-defence courses for mercantile officers, which had been commenced in Aug. 1937, proved their utility, and the question of their extension to the ratings has been discussed. The Admiralty has taken steps to have the decks of British ships strengthened to mount defensive guns, but is continuing the policy of the World War in making them purely defensive.

The passenger side was naturally affected more than the cargo by the crisis, but, taking into consideration the smaller number of passenger ships now in commission, the results were at least promising. The introduction of excursion tickets across the Atlantic did not have a fair trial, but there is every indication that it will be remarkably successful in 1939. The increasing demands of the transatlantic passenger for comfort have caused some of the smaller ships to convert their tourist accommodation back to third class. Apart from the western ocean, most of the interest in the passenger business has been in the Australasian emigrant trade. The large proportion of settlers from southern Europe was causing serious alarm, and assisted immigration of British stock was strongly recommended. After long discussion it has been revived, but to begin with only on a very limited scale with the greatest care in the choice of settlers.

On the cargo side the shipowners have had little upon which they can congratulate themselves. Tramp freights were very much down at the beginning of the year, the January average being the first under par since 1936, and although there was a slight recovery in September, the general level has been unsatisfactory all through the year. The Chamber of Shipping of the United Kingdom intro-



Planet News]

NEW FERRY-BOAT FOR THE LYMINGTON–ISLE OF WIGHT SERVICE, HOLDING 400 PASSENGERS AND 20 CARS. SHE MOVES IN ALL DIRECTIONS, HAS TWO VOITH-SCHNEIDER PROPELLERS (THE FIRST ENGLISH SHIP SO TO BE FITTED), USED FOR STEERING AS WELL AS FOR PROPULSION

duced early in the year, a new system of computing freight index numbers, which is much more reliable and informative than the old but which makes some comparisons difficult. The tramping business was influenced for part of the year by the bumper crops in the northern hemisphere, but the business was very patchy, and the Hudson Bay grain route from Port Churchill was particularly disappointing, only three cargoes being shipped. A large movement of scrap metal, principally to supply Japanese, German, and Italian demands, has afforded a certain amount of relief to the market, many of the American ships sold to be broken up in Europe making their last voyage with a cargo of scrap steel.

In the cargo liner business the tendency has been for the liners to get a good deal of freight at the expense of the tramps, but the business has not always run smoothly, and the European Far Eastern conferences, in particular, have been threatened by the German and Japanese demands for a greater share in the trade.

In the early part of the year tanker freights were the only really satisfactory section of the market, but they later declined very sharply. The sudden drop in freights hit the Scandinavian owners of tankers designed to be chartered to foreign interests particularly hard, while the expropriation of the foreign-owned oil wells by Mexico led to further disorganization of oil shipping. The number of laid-up tankers increased very rapidly and revived the fear that the rather better conditions in the oil trade would tempt many owners to overbuild, further depressing the market.

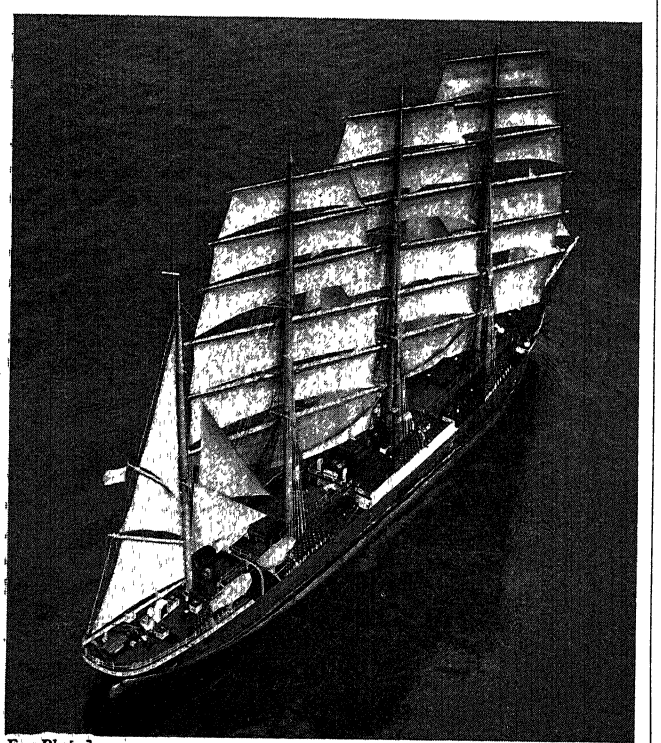
The realization that the 1937 improvement in the shipping business was bound to be a temporary one led to many measures being taken or planned to lighten the blow. When it established the temporary tramp subsidy, the British government had insisted that the owners should establish some scheme of co-operation, and this was continued voluntarily after the subsidy was finished. The co-operative measures suggested have generally been loyally carried out by the owners, and many foreign interests have come into the various schemes. The international Tanker Pool, with its compensation for laid-up tonnage provided by those who have work, has proved such an unqualified success that, encouraged by the co-operation of foreign owners in other matters, the Chamber of Shipping

of the United Kingdom attempted to establish a system of compensated laying up of tramps. Although the original voting was strongly in favour of such a scheme, the final vote only gave it a bare majority, and as it would not be workable in such circumstances, the idea was dropped.

Except for a short jump during the European crisis, the general tendency was for the tonnage laid up to increase throughout the year, though this was not so in Germany in Europe or Japan in the Far East, where government demands and control were primarily responsible. At the end of the year there was a reduction in the number of idle Scandinavian ships, but a curious feature of the figures was that the highest percentage in the world was that of the Greek Merchant Service, which consists so largely of the most cheaply run tramps

Despite the fact that the 1938 accounts of the companies benefit by the 1937 improvements, very few of the European shipping companies have chosen to pay large dividends. To begin with, the first consideration of most firms was necessarily to make up arrears of depreciation running back for many years, and secondly, due account had to be taken of the continued rise in running costs, particularly in Britain and the United States. The financial position of the industry in general was, however, very much strengthened, and there was a conspicuous restoration in the confidence of the investing public. The tangled affairs of the Kylsant Group were practically straightened out by the Royal Mail and Elder Dempster Realization Companies, which salved very much more out of the wreck than had been considered possible, while the new Royal Mail Lines Ltd., put on to its feet by Lord Essendon, purchased the Pacific Steam Navigation Company, which the old Royal Mail Steam Packet Company acquired before the War, but which had to be put on to the market with the remaining assets of the Kylsant Group.

Throughout the maritime world, its strength varying with the standard of living of the various countries, there has been a realization of the necessity for improving the technical education and the conditions of the seaman All countries, either by agreement or legislation, have made big improvements on these two points, realizing that the modern ship demands a carefully trained personnel, and that it is useless to go to that expense if the trained seaman is not going to stick to the sea but will leave it at the first opportunity. The most interesting moves have been made in the United States and Britain The United States Maritime Commission has planned a very comprehensive scheme which is being organized by the United States coastguard, and whose material includes the famous old sailing ship " Tusitala " and the miniature full-rigged ship " Joseph Conrad ". In Britain, the 1935 scheme, which brought into existence the Merchant Navy Officers' Training Board and a uniform system of apprenticeship throughout the whole merchant service, with periodical examinations controlled by a central board instead of only the Board of Trade examinations for certificates, has now got thoroughly into its stride The Royal Society of Arts, as trustees to the Thomas Gray Memorial Fund, has presented valuable prizes to the apprentices in their various years of training, and the competition between the various companies has done infinite good. Acting in conjunction with the Seafarers' Education Service, they have planned a system of scholarships and prizes for ships' boys as well as apprentices, and this also promises very well, although the lack of a petty officer's rank which is worth while will always be felt in merchant ships. In view of the shortage of marine engineers, the Board of Trade revised the examination regulations for certificates to cut out points which were no longer useful and to make the career more attractive without any loss of efficiency ; if the scheme proves as successful as it promises to do, it will probably be extended to the executive officers.



Fox Photos]
THE FINNISH BARQUE " PASSAT ", 3,137 TONS, SECOND IN THE 1938 RACE FROM AUSTRALIA TO ENGLAND

Although there have been no sensational disasters at sea as in so many previous years, 1938 has been a very hard one for the marine underwriters. Several cargo ships have come to grief, some of them with heavy loss of life, and there has been a number of fires, but perhaps the greatest loss has been caused by the innumerable small accidents, many of them too small to be reported even in the technical press, which aggregate a huge sum with the very high cost of repairs. There has been great bitterness felt by Greek shipowners at the decision of Lloyd's underwriters to charge an extra premium for River Plate grain cargoes shipped in Greek bottoms, but the loss statistics justify the precaution.

The high cost of repairs after accident also applies to the demands of the authorities and registration societies for the renewal of classification, and the cost of this has resulted in a number of ships being laid aside which would normally have been reclassed for further service. The drop in prices and the reduced demand resulted in the number of ships sold to be scrapped being considerably smaller than in 1937, but they included a number of vessels whose life could have been prolonged had it been economically worth while, especially in the case of big passenger ships. These include the United States liner " Leviathan ", the Cunard-White Star liner " Berengaria ", and P. & O. liners " Kaisar-i-Hind ", " Moldavia ", and " Naldera ", and many others, while several well-known passenger ships are reported to be on the sale list.

In the individual countries the most interesting events in the year have been as follows :

In Britain the tendency is for the general public to take much more interest in merchant shipping than it has ever done before, a tendency which is long overdue in the opinion of most people. The reduced number of British

ships, and their increasing average age, is causing really serious concern, and there is a growing demand for an independent ministry of shipping, concerned with the merchant navy only and quite apart from the Board of Trade. The adoption of ships by schools of all kinds, and the interchange of correspondence, has been a great success in fostering the interest of the coming generation as well as from the educational viewpoint, but it has involved a big sacrifice on the part of the officers and men concerned. In the United States the industry has been handicapped by continued labour trouble, a large part of it being no real concern of the employers, and also, so far as the passenger side was concerned, by the reports that were spread of the poor discipline in American ships, reports which were certainly not all justified.

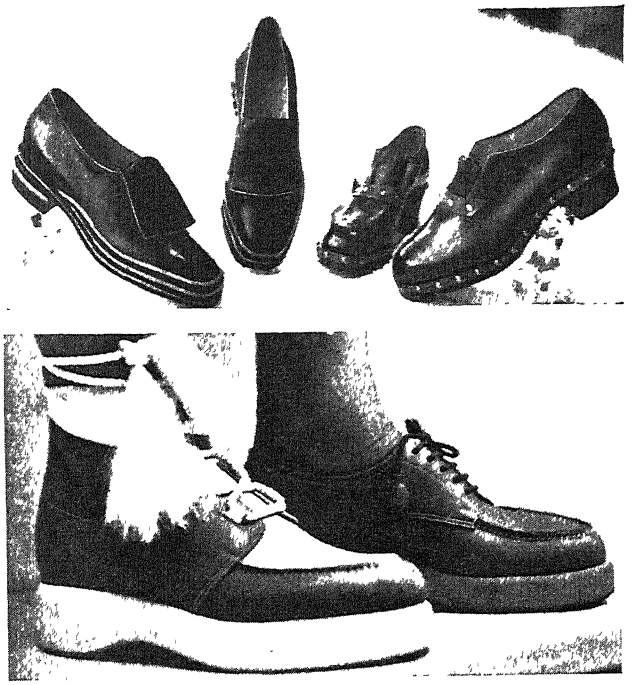
France has also been handicapped by labour troubles, and her shipowners have had to readjust many of their arrangements on account of the greatly increasing running cost. The authorities have given particular attention to the trade lane between the mother country and the North African departments outside the Mediterranean, where it is less liable to enemy attack. Italy's shipping has been largely occupied by the additions to the empire and the development of existing colonies. Germany's shipping has been fully occupied, but very largely on government service. Russia's remarkable success in the organization of the North-East Passage across the top of Siberia as a trade route has been somewhat checked by the realization that the weather is still the main consideration, but that is not causing any relaxation of their efforts. In Spain, practically the entire merchant service at sea has been employed, directly or indirectly, in connexion with the Civil War, while disputes as to the ownership of a number of Spanish ships in foreign waters has led to litigation in several countries. (*See* also SUBSIDIES.) (F. C B.)

SHOE INDUSTRY. As a secondary industry which can be carried on in most countries, shoe manufacturing has continued to receive the attention of governments which see in it a means of restricting imports and finding employment for a certain number of workers. In March 1938, New Zealand announced an increase of approximately one-third in the import duties on boots and shoes, and it was intimated that, apart from the consideration that the market was over-stocked with imported goods, the New Zealand government was anxious to develop the Dominion's shoe industry.

Further progress has also been made since 1937 in equipping Eire with a shoe-producing industry which will eventually make it almost independent of imports. Purchases from abroad in 1938 were the smallest recorded since Eire commenced to organize a shoe trade, which is now finding employment for approximately 6,000 persons in up-to-date factories situated in towns which were in need of local industries.

In those states where it was decided to develop new enterprises in the shoe trade, a reduction of business with former suppliers followed in due course. The general tendency has, accordingly, been for the international commerce in shoes to shrink.

Experiences in the shoe-producing countries have not, however, all been alike in regard to overseas trade. Czechoslovakia and Switzerland, who specialize in export business, maintained a steady output during 1938, in spite of the difficulties in various markets. Great Britain's imports of leather shoes increased slightly and balanced exports in value. During the first half of the year exports of leather



Fox Photos]
THE OCTOBER SHOE AND LEATHER FAIR BOTTOM THICK-SOLED SPORTS SHOES LEFT, BLUE CALF AND WHITE SUÈDE, RIGHT: TAN HOGSKIN. TOP: LEFT (COLOURED CALF INLET IN HEEL AND ABOVE SOLE); RIGHT, RED CALF-STRIPS WITH BRASS STUDS

shoes from the United States increased by approximately twenty per cent and balanced imports in value.

Future developments in the trade in footwear between shoe-producing countries seem likely to depend upon mutual arrangements similar to the Anglo-American Reciprocal Trade Agreement. This provides for an easing of the tariff on women's high-grade shoes entering Great Britain, and favours a class of shoe in which America specializes. In return, the United States has reduced the duties on welted shoes, including athletic and sports footwear. British productions of this type have a small but useful market in America.

In France, the shoe industry received a good deal of attention from the government during the past year, and a scheme of rationalization has been urged upon the trade. Competition had become so keen that a temporary law was passed, forbidding the opening of new shoe factories, wholesale warehouses, and retail shops, or the extension of existing enterprises. The object of this legislation was to give the less well-equipped firms an opportunity to bring their businesses up-to-date. A committee was later appointed to investigate the position and make recommendations for the industry's reorganization. (F. T. B.)

Estimated production for 1938 was: United States, 400 million pairs; United Kingdom, 140 millions; Germany, 72 millions; France 59 millions; Czechoslovakia, 36 millions; Soviet Union, 60 million pairs (an increase due to accelerated machine production); Canada, 21 millions; Mexico, 6 millions; Brazil, 17 millions; Argentine, 15 millions; Australia, 18 millions; British India, 7 millions; China, 3,500,000; Japan, 12,500,000; Africa, 19 millions. (*See* also LEATHER.)

SHOPS AND DEPARTMENT STORES. Although during 1938 the hitherto upward tendency of retail sales (*q.v.*) began to be reversed, particularly in higher-class trade, there was no slackening in the tendency to improve and modernize retail premises. Of the five large department store groups having Central London establishments, three

were engaged in major rebuilding operations This is paralleled by continuous improvement in the premises and equipment of the average small retail shop.

The Act restricting Sunday trading came into full operation during 1938, and initial experience of its provisions gave rise to an appreciable volume of discontent among small traders. It is probable, however, that their discontent will die down when they become accustomed to the new conditions, as with the legalisation of the " early closing day " in 1912. The only new general shops legislation during 1938 was a measure reducing from 48 to 44 the maximum net weekly working hours of juveniles aged fourteen to sixteen as from Jan. 1, 1940.

The discussions between employers' organizations and trade unions resulted in their joint submission to the minister of labour early in 1938 of a scheme for the statutory regulation of minimum wages and labour conditions. The details of this were the subject of continuous negotiation during the year, the difficulties involved arising mainly from the complexity of retail distribution

A marketing scheme for white fish, whose establishment was commenced in the winter of 1938, provided for representation of distributors parallel with producers, and provided that fishmongers and fried fish shops must be registered. Apart from the special cases of pharmacists and pawnbrokers, this is the first example of a compulsory registration scheme in a retail trade, although such projects have been widely discussed.

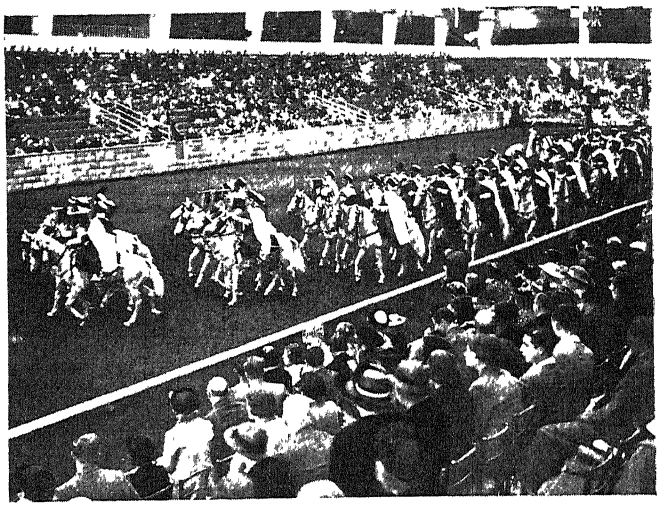
The threat of war in the autumn of 1938 stimulated the preparation of official plans for the wartime regulation of food distribution, involving rationing schemes and price control. (D. Ba)

SHOWS. A brief review follows of some of the chief Agricultural, Horticultural, Horse, Dog, and Cat shows held during 1938.

Agricultural. The King, the largest individual exhibitor, visited the Smithfield Show, London, where the champion beast was Lady Robinson's " Magnolia of Kirklington ", an Aberdeen-Angus. At the Royal Agricultural Society's Show, near Cardiff, the Duke of Kent visited an all-electric farm, and the King's prize-winning beasts included a Devon bull, " Halsdon Defender ". Cattle, sheep, and pig classes at the Bath and West were cancelled because of foot-and-mouth disease. The Duke and Duchess of Gloucester visited the Three Counties Show at Gloucester, where the supreme male championship for Herefords went to Mr Quincey's " Tarrington Punch ". Attendances at Bournemouth Royal Counties Show increased in spite of gale damage.

At the Royal Norfolk Show, Hunstanton Park, the King's prize for the best Norfolk farmer's red-poll went to Thomas Brown and Son's " Marham Blonde ". The champion cow at the National Dairy Show, Olympia, was Mr. H. Jackson's dairy shorthorn, " Strickley Maggie the Eleventh ". At the London Dairy Show, Earl's Court, the supreme cattle championship of England went to Mr. McCallum's " Peacelands Eileen 10th ", the Bledisloe Trophy to the British Friesian breed team, and the Young Farmers' judging contest to the Durham team. The North Metropolitan Electricity Supply Co. exhibited at the Hertfordshire Show a sprout process enabling 150 lb. of green fodder to be grown daily at any time. Entries of pigs and poultry increased at the Royal Ulster Agricultural Society's autumn show.

Lord Wakehurst, Governor of New South Wales, opened the Sydney Royal Show. Total entries increased at the Royal Agricultural Society of Victoria's show, Melbourne, Australia, though cattle entries decreased.



Keystone]

OLYMPIA THE SPAHIS APPEARING BY SPECIAL PERMISSION OF THE FRENCH GOVERNMENT AT THE INTERNATIONAL HORSE SHOW

King Christian of Denmark toured the agricultural exhibition held near Copenhagen, attendances at which exceeded 900,000, a quarter of Denmark's population.

Some 11,621 animals, representing 29 breeds of cattle, horses, sheep and swine, were exhibited at the 39th International Livestock Exposition and Horse Show in Chicago in November

Horticultural. At the Royal Horticultural Society's Chelsea Show, London, visited by the King and Queen and other members of the royal family, the Sherwood Challenge Cup for the best exhibit went to Messrs. Blackmore and Langdon of Bath At the Rhododendron Association's show the finest new bloom was *Dorinthia*, shown by Lord Aberconway. Mr. F. A. Bishop won the challenge cup for the best twelve spikes of distinct varieties at the British Delphinium Society's exhibition. Allwood Bros. won prizes for new carnations at the National Carnation and Picotee Society's show and for the finest novelty at the British Carnation Society's show. A salmon-rose dahlia, *Fortune*, won a gold medal for Mr. Borwise at the National Dahlia Society's show. The best novelty at the National Chrysanthemum Society's first autumn exhibition was *Golden Gem*, yellow with a gold centre. At the National Rose Society's spring show, roses winning certificates of merit were *Dickson's Delight* and *Judith*. At the autumn show, Dickson's *Friendship* and Laxton Bros.' *The Doctor* won gold medals.

Bees Ltd., Chester, won the new Brockhouse Challenge trophy at the Southport Flower Show and the Avling Trophy at Shrewsbury's Floral Fête.

The five-yearly " Floralies Gantoises " was held in Ghent in April, and the Exposition internationale d'Horticulture d'Antibes, the only floral exhibition on the Côte d'Azur, was held in the same month.

Horse. At the Shire Horse Society's show, held at the Royal Agricultural Hall, Islington, London, where entries were higher this year, Mr. J. Morris Belcher's " Harboro' Goldfinder " was supreme champion. The champion Shire at the Norwich spring show of stallions was " Theale Talaton ", and the champion Suffolk Punch " Beau Brocade of Raveningham ". The King won three firsts for Suffolk horses at the Cambridgeshire and Isle of Ely Agricultural show and two at the Hertfordshire show.

At the International Horse Show at Olympia, London,

the Grand Prix de Dressage went to Capt Jousseraume's "Favorite" (France) Major Friedberger (England) on "Derek" won the King George V Gold Challenge cup for jumping and the Connaught cup The King George V cup for mounted police went to "Pip", ridden by P. C Rennie at the Richmond Royal Horse Show

At the Dublin Horse Show the open military competition was won for France by Capt Chevalier, with France, England, and Germany taking second, third, and fourth places. The international military jumping competition was won by Lieut. Douglas Cleland (Canada).

"Antonym", a French horse, won the Brown Riband of Germany, Hitler's prize for the fastest horse over 2,400 metres

Dogs. Mr. H S Lloyd's cocker spaniel bitch "Exquisite Model of Ware" won the cup for the best exhibit at the Kennel Club show at Olympia, and the Heddell Memorial Trophy at Cruft's, at the Royal Agricultural Hall, where the King's Labrador "Sandringham Stream" was first in the post-graduate bitch class There were 2,100 entries for the British Dog Breeders' new exhibition. Novelties shown were Pomeranian sheep dogs at the Berks, Bucks, and Oxon show, and miniature pinschers at the Brighton show At the Kensington Canine Society's show, international champion "Shelterrock Merry Sovereign" was the best dog and "Exquisite Model of Ware" the best bitch

Cats. At the Kensington Kitten Club show, at Tattersall's, London, the best kitten was Mrs. K. J. Clarke's cream Persian "Halcyon Sunkist". Mrs. Sharman showed a perfect male tortoiseshell kitten "Harlequin of Coryton" at the National Cat Club's 46th annual show at Paddington, London. The champion of the 385 cats entered was Capt. W. H. Powell's "Ch. Biscuit of Hanley". (V. R)

SIAM. The treaty of commerce and navigation with Great Britain, signed in Nov 1937, was ratified at Bangkok on Feb 19, 1938; although Great Britain is the first country to renounce in practice all restrictions on Siamese trade, similar treaties have also been signed with the United States, Belgium, Denmark, France, Japan, Sweden, and Switzerland, the French treaty providing for the demilitarization of a zone fifteen miles broad on the Mekong frontier The council of Regency resigned in August, on Sept 11 the government dissolved the Assembly after an adverse vote; elections were held in mid-November, when the government was returned, though with a precarious majority that left the political prospect somewhat obscure; about the same time King Ananda returned to the country on a short visit from his school in Switzerland.

It was reported in October that an attempt to restore the exiled King Prajadhipok by a *coup d'état* had failed. In October an order for two 10,000-ton warships was placed in Trieste, in pursuance of the policy of rapid naval expansion followed in recent years. A British air attaché was for the first time accredited to Bangkok during the year. In September the engagement was announced of Prince Chula-Chakrabongse, long resident in England, a nephew of the ex-King, to Miss Elizabeth Hunter, an Englishwoman.

Area and Population:
Area 200,148 sq. miles.
Population (May 31, 1937) 14,465,000.
Chief Towns: Bangkok, capital, 681,000; Chiengmai, 545,000; Ayuthia, 300,000.

Ruler. King Ananda Mahidol.

Language. Siamese.

Religion (1930 census). Buddhist 10,958,426: Mohammedan 498,311.



Imperial Airways]

ENTRANCE TO WAT POH TEMPLE, BANGKOK

Production:

Maize (1936)	4,500	metric tons
Rice (1937)	4,695,600	,, ,,
Tobacco (1936)	7,000	,, ,,
Rubber, crude (exports 1937)	36,000	,, ,,
Cotton, ginned (1936)	1,600	,, ,,
Tin Ore, metal content (1937)	16,300	,, ,,

Overseas Trade, 1937–38:
Imports, merchandise 111,128,400 baht
Exports ,, 165,935,948 baht
Bullion and Specie, imports 696,081 baht: exports 3,556,858 baht.

Communications:
Roads, State highways under construction 555 miles
,, ,, ,, completed (1938) 676 ,,
Railways, State open for traffic (1936) 1,925 ,,
Motor vehicles licensed (Mar. 31, 1935) cars, taxis, lorries etc. 4,021; cycles 76.

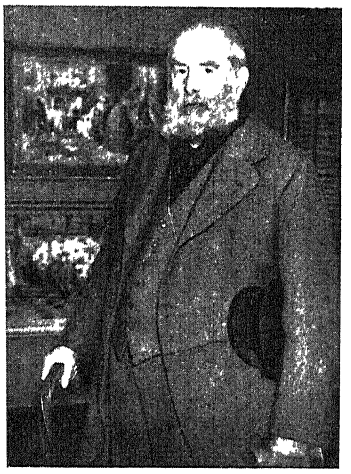
Finance and Banking:

Revenue, ordinary 1937–38 (actual)	108,908,502 baht
,, ,, 1938–39 (est.)	109,425,940 ,,
Expenditure, ordinary 1937–38 (actual)	101,627,102 ,,
Expenditure, ordinary 1938–39, (est.)	109,397,988 ,,
,, capital ,, ,,	22,108,524 ,,
Public Debt (Mar. 31, 1938)	£6,417,526
Notes in circulation, Sept. 30, 1938	146,000,000 baht
Exchange Reserve (mainly in sterling) Sept. 30, 1938	122,000,000 ,,
Exchange Rate (approx.)	11 baht = £1 stg.

Education 1934–35:

Elementary, schools	8,929; scholars	916,780
Secondary ,,	318; ,,	44,726
Special ,,	4,298; ,,	142,689
University, number of students		9,539

SICKERT, (WALTER) RICHARD (186c–), British painter and etcher, son and grandson of artists (see *Ency Brit.*, vol. 20, p 612), is best known for his depiction of lower middle-class life, of Paris streets and café scenes, and for his portraits He is a Fellow of the Royal Society of Painters, Etchers, and Engravers, holds the honorary LL D. of Manchester University, and from 1928 to 1930 was president of the Royal Society of British Artists.



L.N.A.]
MR. RICHARD SICKERT

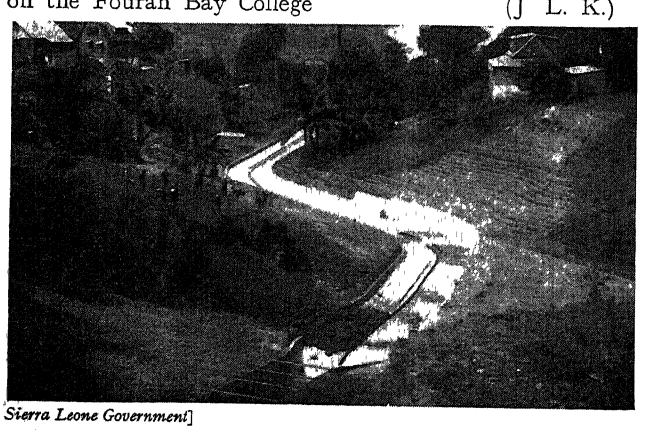
Elected A R A in 1924 Sickert was advanced to full Academician in 1934, but in the following year resigned as a protest against the refusal of the Royal Academy, as a body, to take any step to prevent the removal and probable destruction of the statues by Jacob Epstein that formed part of the house in the Strand, London, which had been acquired by the government of Southern Rhodesia. Sickert, who showed five pictures at the Academy in 1935, has not exhibited there since, but he has held private shows and has shown elsewhere, he is well represented at the Tate Gallery, in the British Museum, the Luxembourg, and at Rome, and many provincial and dominion galleries have characteristic examples of his work.

SIERRA LEONE. The disintegration of tribal authority has created considerable difficulties for the government's present policy of developing local government through the native authorities. Ordinances to implement this policy were introduced in 1937, and a provision of £6,365 was voted in 1938 to enable treasuries to be established in fifteen chiefdoms

The people are mainly engaged in subsistence agriculture and in the palm products industry, but the mining industry is making considerable progress, particularly in the production of iron-ore.

An attempt is being made to check road and railway competition by legislation. A new motor road is at present under construction along the coast and the peninsula, financed from colonial development funds.

A colonial office commission was formed in 1938 to report on the Fourah Bay College (J L. K.)



Sierra Leone Government]
CANALIZATION OF SANDER'S BROOK, FREETOWN: A SCHEME FOR STREET DRAINAGE TO BE SPREAD OVER TWELVE YEARS

Area and Population :
Area total : 27,925 sq. m. (Colony 4,000 sq m.).
Population (est. Dec. 31, 1936), 1,920,000 (1931 Europeans 598)
Governor. Sir D. J. Jardine, K.C.M G.
Production 1937:

Palm Kernels (export)	76,776 tons (£884,812)
Ginger (export)	3,677,072 lb. (£97,622)
Kola Nuts (export)	5,034,700 lb (£60,504)
Diamonds	913,401 carats (£1,084,664)
Gold, unrefined	39,151 oz (£251,766)
Iron Ore (export)	693,985 tons (£325,605)

Overseas Trade 1937 :
Imports, total £1,839,582 (Bullion and specie £147,652)
Exports, ,, £2,819,977 (Bullion £269,465)
Communications :
Roads, motor . Colony 70 miles, Protectorate 852 miles
Railways, Government 310 ,,
Finance :

Revenue (1937) £1,025,709, (est. 1938)	£857,282
Expenditure (1937) £919,266; ,,	£852,489
Public Debt (Dec. 31, 1937)	£2,056,359

Education, Elementary. Schools, 243, scholars, 20,298.

SIKKIM, across the North-East frontier of India, is a small protected State (area under 3,000 sq. miles) lying between Bhutan and Nepal. The population is a little over 100,000, mostly Hindus and Buddhists. It is a mountainous and beautiful country, studded with picturesque Buddhist monasteries. Gangtok (5,800 ft. high) is the capital, where the Maharaja and the political officer reside. Excursions from Darjeeling are popular.

SILK, ARTIFICIAL: *see* RAYON.

SILK AND SILK MANUFACTURE. The year 1938 was the most difficult in the silk industry for a decade. The position in the U.S A., where the average monthly takings fell from 40,000 bales to 33,000 bales, is typical of the conditions in other countries. Some improvement, fortunately, was experienced during the last weeks of the year. Buyers of raw silk were practically restricted, however, to one market—Japan—because supplies from China and Italy were almost unobtainable. It is doubtful whether during any period of its five thousand years' history the Chinese silk industry has suffered such terrible devastation as it did in 1938. No large-scale revival of sericulture in China can be immediately anticipated, although new filatures are being established in the International Settlements and the Japanese are endeavouring to build up an industry which they have destroyed.

The United Kingdom suffered from a flood of cheap stockings and frocks from abroad. The Council of the Silk Association of Great Britain and Ireland has resolved that the only effective way of dealing with the flood of imports is the imposition of quotas. The textile industry is returning to Lancashire, where the number of operatives in the hosiery industry has risen from 2,000 in 1930 to nearly 12,000.

Much interest, not unmixed with some misgiving on the part of silkmen, attached to the publication of American Patent No. 2,130,948, taken out in the name of W. H. Carothers, dealing with a mixture of 14·8 penta-methyleneamine, 29·3 parts of sebacic acid, and 44 parts of mixed xylenols. This may have a serious affect on the manufacture of silk stockings, which to-day accounts for well over half the silk used in England. The new fibre is one-tenth the thickness of natural silk, and can, if necessary, be made only one seventy-fifth its thickness, and yet it is one-and-a-half times as strong. One of the most important points about it is that " elastic recovery of these fibres under moderate elongation is very remarkable and far

superior to existing artificial silk or real silk". If this and other new synthetic "silks" do cut out the use of silk in hosiery, it will be an enormous blow to the Japanese industry

In the spun silk industry of the United Kingdom depression persists Other countries, Japan in particular, are underselling British manufactures of fabrics made of or containing spun silk in their own markets For years the average import of Schappe yarns into the United Kingdom was about 68,000 lb. but for the last twelve months for which figures are available, it has increased to 140,000 lb Again the Sino-Japanese conflict has affected the supply of raw material, which largely comes from Shanghai and Canton. Export trade has dwindled because of Japanese and continental competition.

With the object of directing propaganda in favour of the development and consumption of silk in all its spheres and of exchanging information with silk organizations in all parts of the world, a silk centre was opened during the year in Paris (W. Hu)

SILVER. The world's silver production is rather heavily centred in North America, which in 1929 furnished 75 per cent of the total output, and 67 per cent in 1937; Mexico is the leading producer, with 31 per cent, followed by the United States with 25 per cent, Canada with 8 per cent, and the remainder of the continent (including Central America, West Indies, and Newfoundland) 2 per cent.

An interesting factor in the industry is the increase of output in Argentina, from 50,000 oz. in 1935 to 4,100,000 oz. in 1937. The status of the important producers is shown in the accompanying table

Figures for the first three quarters of 1938, although not quite complete, indicate a small increase in output over the same period in 1937; the chief increases are in Mexico, Canada, and Peru, and the chief losses in the United States and South American countries.

In a proclamation dated April 29, 1938, the nationalization of silver, which was established in the United States on Aug. 9, 1934, was revoked. This was largely a matter of form, as the effect of the Act had for some time been obsolete; the price of 64·64 cents per ounce, paid by the Treasury for newly mined domestic silver, was not altered.

World Production of Silver

(In millions of fine ounces)

	1929	1933	1935	1936	1937
Canada	23·1	15·2	16·6	18 3	22·7
United States	60·3	21·0	38·3	62·8	69·3
Mexico	108·7	68·1	75·6	77·5	84·7
Other N. America	2·8	6·0	4·6	4·8	5·2
Peru	21·5	7·3	17·1	19·9	17·0
Bolivia	6·2	5·5	8·0	10·7	9·5
Other S. America	1·7	0 6	1·6	2·3	6·2
Germany	5·5	6·3	6·3	6 5	7·0
U.S.S.R.	0·4	1·0	3·9	5·0	5·0
Other Europe	5·5	8·0	7·3	7·3	7·6
Japan	5·2	6·0	8·2	9·8	10·0
India	7·3	7·3	6·9	6·7	6·9
Other Asia	2·3	1·9	2·4	2·7	2·8
Africa	1·3	4·0	5·2	4·7	5·2
Oceania	9·9	11·6	12·4	13·2	14·1
Total	261 5	169·7	214·4	252·3	273·3

British production of silver is comparatively small; the United Kingdom itself has only a negligible output, and Empire production centres chiefly in Canada, Australia Burma, and South Africa Empire production as a whole is still slightly under the 1929 level in ounces, but by less than the change in world output, so that the proportion of the world total in 1937 was seventeen per cent against sixteen per cent in 1929 (G A. Ro)

SIND is now a separate Indian province under a Governor (Sir Lancelot Graham, since its inception in April 1936), area 46,378 sq. miles; pop 3,887,070. The capital is Karachi (pop. 263,563), with a splendid harbour and air base; it is the coastal terminus of the long North Western railway system. The "Democratic" ministry under Sir G H. Hidayat-Ullah resigned in March 1938, and was succeeded by a coalition described as the Sind United Party, with K B Allah Bakhsh as chief minister. It embraces the Sind Hindu party and is promised the support of the Congress The government suffers from financial stringency, and indeed the separation of Sind from Bombay would have been impossible without the revenues which are anticipated from the Lloyd Barrage over the Indus. The final report for that undertaking has just been issued. £15 millions have been spent on the work; the dam spans nearly a mile of the river; its canals are over 6,500 miles in aggregate length; and the largest of them is wider at bed level than the Panama Canal. (ME.)

SINGAPORE, capital of the Straits Settlements (*q.v.*) came into world prominence on Feb. 14, 1938, with the official ceremony of the inauguration of the naval base on the north side of the island, opposite the mainland of Johore Sir Shenton Thomas, Governor of the Straits Settlements, opened the new graving dock. The construction of the base cost more than £9 millions, and involved conversion of a large area of swamp and rubber land into a wet basin. Six million cubic yards of earth were excavated in moving the hills, and 8,000,000 cu. yards of earth were used to fill the swamps. The graving dock can accommodate the largest warship afloat. Formidable naval guns protect the base, which is the headquarters of the Royal Air Force, Far East Command. This consists of two torpedo bomber and two general reconnaissance squadrons, also an anti-aircraft co-operation unit. An anti-aircraft brigade and infantry brigade serve on the island. In June, Dr. P. S. Hunter, municipal health officer, drew attention in his annual report to "the almost inhuman types of housing" prevalent in the Chinese parts of the city. Mr. H. R. Cheeseman, in a notable study of secondary education in Singapore, declared that the beginning of the second cen-



Imperial Airways]

SINGAPORE: THE WATERFRONT FROM ANDERSON BRIDGE

tury of British control witnessed a danger of the Malay race being driven out of the city. Singapore's lack of interest, he alleged, was to blame. In eight months 6,719 dogs were destroyed on the island, following an outbreak of rabies, the first for thirty years. Mass inoculation of dogs was enforced, and in May the muzzling order was withdrawn (G B)

SINKIANG (Chinese Turkestan), area 633,802 sq. miles, population 2,588,000, is one of the largest, remotest, and most sparsely populated sections of China. A large part of this vast territory consists of desert, which accounts for the scanty population. The principal towns are Kashgar (80,000), Yarkand (75,000) in the south-west, and Urumtsi (50,000) in the north. The latter is the seat of the Chinese administration The chairman of the Provincial government is Li Yung Sinkiang is not an integral part of China and is largely inhabited by peoples of Turki and Mongolian stock

Most of the province is under the control of the Chinese administration, which is under strong Soviet influence, but some of the southern districts remain in the hands of insurgents against the administration. Sinkiang assumed additional strategic importance during 1938 as one of the routes through which Soviet supplies could reach China along a rough motor road from Urumtsi to Lanchow, in Kansu, and thence to Sian, in Shensi. A flying-school for Chinese aviators, with Soviet instructors, was reported to have been opened in Urumtsi. (W. H. Ch.)

SINO-JAPANESE WAR. Any prospect of an early negotiated peace between Japan and China vanished when Chiang Kai-shek rejected the Japanese proposals for the termination of hostilities which were communicated to him through the mediation of the German Ambassador to China, Dr. Oskar P. Trautmann, and the Japanese government, on Jan 16, 1938, issued a declaration of policy emphasizing its intention to deal no further with the Nationalist government of China. The Japanese peace offer was never published in full; but the Foreign Minister, Mr. Hirota, declared before the Diet that it was based on four points: political co-operation between Japan and China; economic co-operation between Japan, Manchukuo, and China; establishment of "demilitarized zones in necessary localities", and payment by China of a war indemnity.

In view of these circumstances Japan began to press on its military operations with redoubled energy, pursuing the objective, frequently announced by its statesmen, of crushing Chiang Kai-shek and the Kuomintang, and dealing with new regimes which would be willing to "co-operate" with Japan. The Japanese advance in North China in January passed the line of the Yellow River In the lower Yangtze valley the Japanese forces occupied an irregular triangle, bounded by the cities of Shanghai, Nanking, and Hangchow. The Japanese army on Feb. 19 issued a statement claiming the occupation of 258,300 sq. m. in North China and of 27,027 sq. m. in Central China (The area of the Japanese empire is 260,758 sq. m.) However, this occupation was by no means complete. It was largely confined to the larger towns and railway lines, and considerable districts in the interior remained under the control of Chinese authorities. Chinese guerrilla forces, especially in mountainous Shansi province, harassed the Japanese garrisons. At no time, however, did this guerrilla activity reach sufficient proportions to paralyse or interrupt for long periods of time the vital Japanese railway communications.

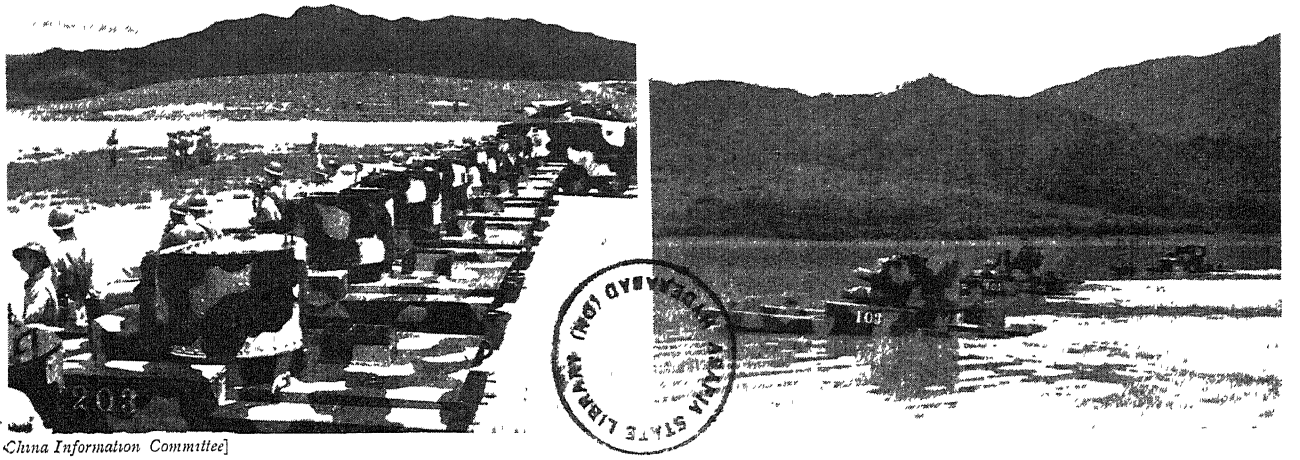
Japanese military operations during 1938 centred around



China Information Committee]
MADAME CHIANG KAI-SHEK AND WAR WORKERS MAKING GARMENTS FOR WOUNDED CHINESE SOLDIERS

three main objectives, Hsuchow-fu on the Lunghai railway, Hankow, and Canton. Hsuchow-fu was important as the junction point of the Lunghai and Tientsin-Pukow railways. Hankow, after the fall of Nanking, became the main centre of Chinese resistance, although the capital was nominally transferred to Chungking, several hundred miles farther up the Yangtze River. Canton was a natural Japanese objective, because it was the metropolis of South China, and was the main link in China's most effective route for the import of foreign munitions. There was a steady flow of munitions into Hongkong, which, as a British colony, was not subject to the Japanese blockade, and thence by rail or road to Canton.

Drive for Hsuchow-fu. The Japanese advance against Hsuchow-fu took the form of a push from the north under General Juichi Terauchi, and a move from the south, under General Shunroku Hata, who in February replaced General Iwane Matsui as commander of the Japanese forces in the Shanghai–Nanking area. The Chinese had recovered from the demoralization which overtook their forces during the retreat from Shanghai to Nanking, and the defence of Hsuchow-fu was carried out with skill and stubbornness. Chiang Kai-shek himself inspected the front, and on one occasion narrowly escaped being shot down by Japanese aeroplanes during a flight along the Lunghai railway. The Japanese troops to the south of Hsuchow-fu were held up for some time in the neighbourhood of Pengpu, and early in April a flying column of Japanese troops, which had advanced somewhat precipitately with little support, was pushed out of the town of Taierchwang, north-east of Hsuchow-fu. This was one of the few definite reverses



China Information Committee]

LEFT: CHINESE AMPHIBIAN TANK CORPS SECTION IN LINE. RIGHT THE TANKS ACTING AS A RIVER PATROL

sustained by the Japanese during the war, but the numbers of Japanese casualties were considerably exaggerated in some reports which were put out by Chinese sources.

While military operations were in full swing, the Japanese political grip on Central China was tightened by the organization, on March 28, of a so-called Renovation Government in Nanking, headed by the veteran Anfu politician, Liang Hung-chi The new regime created three *yuans*, or administrative committees, for executive, legislative and judicial functions, and seven departments. Like the new regime which had been established under Wang Keh-min in Peking in December, it was entirely dependent on Japanese support, and it co-operated with the Peking Government by issuing periodic joint statements denouncing Chiang Kai-shek and the Kuomintang. Fusion of the two regimes, frequently predicted, was suspended pending further development of the military and political situations.

Japanese technical military superiority prevailed on the Hsuchow-fu front in May. Following tactics which were frequently employed in the last decisive stages of advances, a Japanese mechanized unit, advancing swiftly from the south, cut the Lunghai railway at Tangshan, west of Hsuchow-fu, on May 14. Hsuchow-fu itself was taken on the 19th, but Japanese efforts to envelop and completely destroy the Chinese armies were not successful. The Japanese forces were not numerous enough to make the encirclement complete, and the majority of the Chinese troops filtered through to safety.

Reorganization of Cabinet. The fall of Hsuchow-fu was the prelude to a drastic shake-up of the Japanese cabinet on May 26, undertaken with a view to speeding up the prosecution of the war by bringing stronger personalities into the government. Prince Konoye remained at the helm as premier; but there were changes in most of the important ministries. General Kazushige Ugaki took over the portfolio of foreign affairs; Mr. Seihin Ikeda, well-known financier, became concurrently minister of finance and minister of commerce and industry; General Sadao Araki, a well-known representative of nationalist ideology, became minister of education. (General Ugaki, who was criticized for alleged pro-British tendencies, resigned his post on Sept. 29. Mr. Hachiro Arita became foreign minister on Nov. 5.)

A few days later in May General Seishiro Itagaki, who had played a leading rôle in the establishment of Manchukuo, and had served as a commander on several fronts in the hostilities in China, replaced General Sugiyama as minister of war. This was a significant change, because Sugiyama was generally regarded as lukewarm towards the idea of pressing into the interior of China. Itagaki, on the contrary, was identified with a strong forward policy in China.

Campaign for Hankow. Immediately after the capture of Hsuchow-fu, General Hata, in a press interview, announced the Japanese intention to march on to Hankow, and during the next few months this large city, 600 miles up the Yangtze River, became the primary objective of the Japanese drive. The three adjacent cities of Hankow, Wuchang, and Hanyang represented a point of considerable strategic and economic importance.

Hankow is at the centre of a network of rail and river lines of communication. It is connected with Canton by a newly constructed railway, which was of immense value in bringing stores of imported munitions and supplies to the front. Through the Peking–Hankow and Lunghai railways it is linked up with Sian, capital of Shensi province, which is the southern terminus of the most convenient of the long routes from the Soviet Union to China. Both the Hanyehping iron fields, located in the vicinity of Tayeh, near Hankow, and the Hanyang arsenal are serviceable for the prosecution of the war.

The first Japanese plan for the reduction of Hankow contemplated an advance westward along the Lunghai railway to Chengchow, junction point on the Peking–Hankow railway, followed by a movement down the latter line. This was to be accompanied by a thrust up the Yangtze River. The Chinese resistance was weak, and the Japanese forces entered Kweiteh on May 28 and the large town of Kaifeng on June 6. A swift move up the Yangtze River led to the occupation of Anking on June 12.

At this time, however, the Chinese resorted to a desperate manœuvre which blocked the northern route of the Japanese offensive and probably delayed for some time the capture of Hankow. The Yellow River dykes were broken down between Chengchow and Kaifeng, and a considerable part of the countryside was flooded. Even after the waters receded a slimy ooze remained which made the progress of large bodies of troops with artillery and equipment impossible.

The Japanese were consequently deprived of the possibility of utilizing railways, and their main advance pro-

ceeded up the huge Yangtze River, warships covering and co-operating with the operations of their land forces, while the river also served as a chief means of transport for their supplies. A subsidiary line of advance was provided by the Hwai River, farther to the north. While the Hwai is much shallower than the Yangtze, the Japanese showed considerable resource in providing flat-bottomed boats, drawing little water, for the carrying of men and supplies

The Japanese land and naval forces, pushing up the Yangtze from Anking, in the face of mines in the river and fortifications along the banks, captured Hukow on July 5 and Kiukiang, the last large town on the Yangtze below Hankow, on the 26th During the intensely hot months of the Central China summer, the Japanese suffered from cholera, dysentery, and other seasonal diseases, and this factor together with such natural obstacles as mountainous country, and booms thrown across the river at various points by the Chinese, helped to retard their advance.

The capture of Kiukiang opened up a secondary front along the railway which leads from Kiukiang southward to Nanchang, the capital of Kiangsi province. The Japanese could not safely press farther up the river while their left flank was exposed to thrusts from the Chinese troops north of Nanchang. So an advance was launched along the Kiukiang–Nanchang railway. It came to a standstill around Teian, where the Chinese lines held with considerable stubbornness, but it fulfilled the purpose of safeguarding the Japanese line of communication along the Yangtze against Chinese raids.

During August and September the Japanese advance was slow, indicating both firm Chinese resistance and considerable natural obstacles October, however, proved to be the climactic month of the drive against Hankow. On Oct. 7 the Japanese troops which had been operating some distance north of the Yangtze River reached the important Peking–Hankow railway south of Sinyang. On the following day Kichun, an important point on the north bank of the Yangtze, was taken A triple drive against Hankow started, a combined land and naval force pushing up the river while other units moved down the Peking–Hankow railway and struck through the mountains toward Macheng, and Japanese forces which had advanced west of Teian captured Yangsin and Loki, threatening the Canton–Hankow railway.

The successful Japanese landing in Bias Bay and the lightning drive for Canton probably had a bad effect on the morale of the South China troops which were included in the armies defending Hankow, and hastened the crumbling of the last defences of the latter city. At any rate, the last stages of the Japanese capture of Hankow proceeded very rapidly. A mechanized unit, after a swift advance, seized Hwangpei, twenty miles north-east of Hankow, on Oct. 24. On the afternoon of the following day the first Japanese forces entered Hankow. The occupation of the three cities, Hankow, Wuchang, and Hanyang, was pronounced complete on Oct. 27, and a week of celebration, with daytime parades and nocturnal lantern processions, was inaugurated in Tokyo.

In contrast to the pause which followed the capture of Nanking in Dec. 1937, the Japanese armies pressed hard on the heels of the retreating Chinese, advancing southward along the Canton–Hankow railway. Yochow, a large town on Lake Tungting, was occupied on Nov. 12.

Operations in South China. From the beginning of the war the importance of the Hongkong–Canton route as a source of supplies for China was obvious. There was a good deal of sentiment in Japan, especially in navy circles, in favour of cutting this route by occupying Canton But for some time contrary considerations, such as the desire to avoid complications with Great Britain and the fear of dispersing Japan's forces too widely, prevented the launching of this expedition. The sole land operation in South China during the spring and summer was the occupation of the port of Amoy, in Foochow province, on May 10.

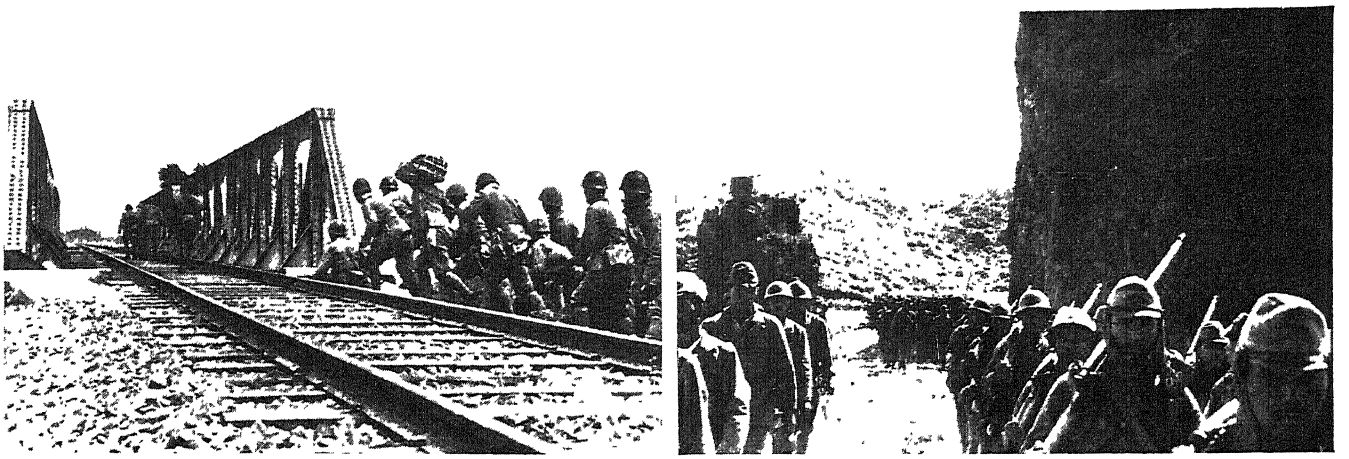
There were constant air attacks on the city of Canton and on the Canton–Kowloon and Canton–Hankow railways, as also on other towns in Kwangtung and Kwangsi provinces. The most concentrated air bombardments of Canton occurred during a ten-day period at the end of May and beginning of June. About 1,500 people were killed and 5,000 were wounded during these raids. About half the population of Canton evacuated.

There was extremely little defence against the Japanese air raids in South China. China's air force was almost entirely concentrated in the Yangtze valley. The few anti-aircraft guns at Canton were ineffective. But the Japanese experience demonstrated that it is extremely difficult to disable rail communication by air bombing. The Canton–Kowloon line was never interrupted for more than 24 hours, repair gangs laying down track almost as fast as it was torn up by Japanese air bombings. The Canton–Hankow line offered more targets in the shape of long bridges; yet here also there was only one prolonged interruption of through traffic, lasting for two or three weeks. Considerable quantities of American and British aeroplanes and machine guns, rifles, and ammunition from several European countries, including Germany, continued to come into China through Hongkong.

When the Japanese government decided to attack Canton the realization of the objective proved almost ridiculously easy. An expeditionary force under the command of General Moto Furusho disembarked in Bias Bay on Oct. 12. The advance inland was practically without resistance. The important town of Shecklung, on the Canton–Kowloon railway, fell on the 19th; on the 21st the Japanese troops entered Canton, a considerable part of which was burned as a result of fires and explosions started by the Chinese before they left the city.

The ease with which Canton, long regarded as a centre of nationalism and anti-Japanese feeling, was captured is capable of several explanations. South China was denuded of its best troops for the defence of Hankow; and China's limited stock of modern military equipment was also concentrated in the Yangtze valley. This very probably led to resentment and lowered morale among the 80,000 Kwangtung provincial troops which were available for the defence of the city. Still, the capture of such an important city with such a small loss (the Japanese reported only 77 of their troops killed in the advance against Canton) indicates gross negligence, if not actual treachery on the part of General Yu Han-mow and other Chinese military leaders entrusted with the command of the Chinese forces in this area.

Although the Japanese troops in the Canton expedition avoided any friction with Hongkong and scrupulously respected the frontiers of the British colony and leased territories, the seizure of Canton was a crushing economic blow to Hongkong, which is cut off from its natural trade hinterland. Another result of the Japanese occupation of Canton is to increase the importance of French Indo-China in the Far Eastern conflict. For it is only through



Keystone]

THE JAPANESE ADVANCE LEFT TROOPS CARRYING EXPLOSIVES TO DESTROY A BRIDGE ON THE LUNGHAI RAILWAY AND CUT OFF THE RETREAT OF THE CHINESE FORCES DEFENDING HSUCHOW (MAY 1938) RIGHT A JAPANESE COLUMN ON THE MARCH TOWARDS HUKOW, PASSING THROUGH DUSTY COUNTRY IN THE HEAT OF MIDSUMMER (AUGUST 1938)

this colony that China can now receive any considerable amount of supplies from abroad The Soviet Union is too far away and there are neither railways nor good roads in the desert and arid stretches of western and north-western China which lie between the centres of Chinese resistance and the nearest Soviet railheads. The new motor-road which has been built between Burma and Kunming, capital of Yunnan province, is of limited utility, since motor transport can never approach the carrying capacity of a railway. French Indo-China, on the other hand, has two means of direct rail communication with South China One is the narrow-gauge line from Hanoi in Indo-China to Kunming in Yunnan. The other is the line from Hanoi to Lungchow in the western part of Kwangsi province. China is rushing construction on new railway lines between Lungchow and Nanning, capital of Kwangsi, and between Nanning and Kweilin. A new line between Kweilin and Hengyang, on the Canton–Hankow railway, has already been completed. Japan has been closely watching the possibility of aid to China through French Indo-China, and representations to the French government protesting against alleged shipments of munitions and supplies through Indo-China have been made on several occasions. The French government have consistently denied these allegations.

Results and Prospects. The occupation of Hankow and Canton marked the end of one phase of the war. It brought under Japanese control China's six largest cities, Peking, Tientsin, Shanghai, Nanking, Hankow, and Canton. Almost the entire network of China's railways is now in Japan's hands, as is every port of any consequence. The Chinese air force has apparently been largely destroyed, and Japanese mastery of the air in China is undisputed even if one views with some scepticism the Japanese navy's claim that 1,415 Chinese aeroplanes and only 111 Japanese have been destroyed during the war.

In short, Japan's technical military superiority over China, generally recognized at the beginning of the war, has fully vindicated itself, although Chinese national unity and stubbornness in the face of repeated defeats have surprised some observers. Even after the loss of Hankow and Canton, Chiang Kai-shek, in a message issued to the Chinese people on Nov. 1, proclaimed his intention to fight on, confident in China's final victory. Characteristic excerpts from his message are :

" It is better to be a broken jade than a whole tile. The Wuhan cities have fallen into the hands of the enemy ; but what they have is only scorched earth and dead cities in exchange for five months of fighting and hundreds of thousands of casualties. Already the Japanese are deep in the mire and from now on they will tread on thornier ground China should continue to draw the enemy farther into the interior in order to force them to play an increasingly passive rôle. Irrespective of changes in the international situation, Japan must one day collapse from exhaustion China is fighting a revolutionary war for national liberation and to prevent subjugation, and in a revolutionary war there is no end until the final victory is won."

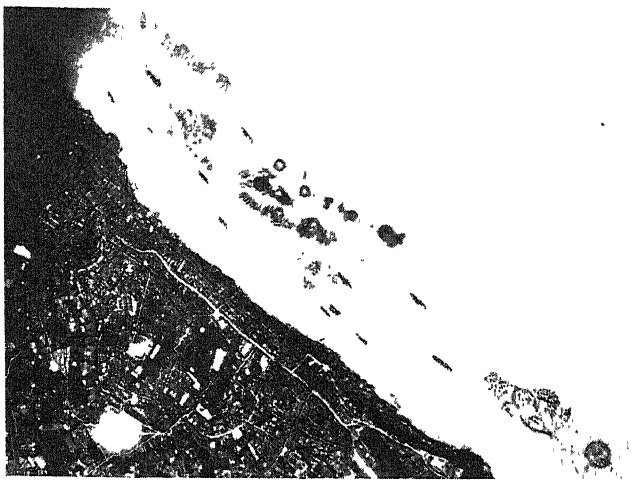
Almost simultaneously, on Nov. 3, the Japanese government issued a statement calling for " a new order which will ensure the permanent stability of East Asia ", an order based on " a tripartite relationship of mutual aid and co-ordination between Japan, Manchukuo, and China in political, economic, cultural, and other fields ". The statement also declared :

" The Kuomintang government no longer exists except as a mere local regime. However, so long as it persists in its anti-Japanese and pro-Communist policy, our country will not lay down its arms until that regime is crushed "

In the light of these uncompromising statements, there seems little room for an agreed peace. It seems probable, however, that the scope of military operations will diminish now that the Japanese have occupied most of their objectives, so far as large cities and routes of communications are concerned. Such questions as the ability of the Japanese to consolidate their gains and to crush the guerrilla movement behind their lines, the financial and economic endurance of the two countries, and the action or lack of action by other powers with interests in China seem likely to play a considerable rôle in influencing the future course of the struggle.

Japan and Foreign Policy. A number of Western powers, notably Great Britain, the United States, France, Italy, and some of the smaller European powers, enjoyed certain special privileges in China at the time of the outbreak of hostilities. Among these may be mentioned the right of extra-territoriality, or of exemption from the jurisdiction of Chinese courts, the existence of foreign-administered concessions and settlements in such trading centres as Shanghai, Tientsin, Hankow, and Canton, the treaty right of stationing troops in the Peking–Tientsin area, and the traditional right of sending gunboats into Chinese coastal waters and larger rivers.

The existence of these foreign rights and privileges has



Planet News]
CHINESE SHIPPING IN LAKE TUNGTING, ABOVE HANKOW, BEING BOMBED FROM JAPANESE AIRCRAFT

lent special significance to Japan's relations with outside powers during the war. During 1938 there were no such spectacular "incidents" as the sinking of the United States gunboat "Panay" by Japanese navy aeroplanes in Dec. 1937, or the wounding by machine-gun bullets of the former British Ambassador to China, Sir Hughe Montgomery Knatchbull-Hugessen, or the firing on British gunboats in the Yangtze. This is partly attributable to an improvement in the discipline of the Japanese troops and to the exercise of stronger control over the activities of hot-headed junior officers. The occupation of Hankow and Canton was not attended by such excesses as characterized the capture of Nanking and some other towns in 1937.

There has, however, been chronic friction on such issues as interference with normal commercial and shipping facilities, alleged cases of discrimination against foreign traders in Japanese occupied areas, and occasional acts of arbitrariness and violence by Japanese soldiers against foreign nationals.

Great Britain, the country with the largest investments in China, has naturally experienced the largest number of economic grievances. Among the more serious of these are the barring of British merchant shipping, ostensibly for military reasons, from the Yangtze River; the maintenance of the Japanese military occupation of the industrial sections of the International Settlement at Shanghai; the refusal of the Japanese government to make any provision for payment of interest to British bondholders of the Chinese railways, almost all of which are now under Japanese military control; the establishment in North China of a wool monopoly which excludes foreign merchants.

America addressed a number of representations to Japan on such occasions as the bombing of American mission hospitals at Wuchow, in Kiangsi, and at Tungpeh, in Honan, the slapping of an American consular official, Mr. John Allison, at Nanking, and the shooting down on Aug. 24 of a Chinese mail aeroplane by Japanese naval aeroplanes near Hongkong. The protest in this case was based on the assertions that an American company was financially interested in the Chinese National Aviation Corporation, and that the life of the American pilot of the aeroplane, Mr. J. L. Woods, had been endangered. A broad statement of American economic grievances in connexion with Japanese activities in China was contained in a note presented to the Japanese government on Oct. 6, which ended with the following three requests:

(1) The discontinuance of discriminatory exchange control and of other measures imposed in areas in China under Japanese control which operate either directly or indirectly to discriminate against American trade and enterprise

(2) The discontinuance of any monopoly or of any preference which would deprive American nationals of the right of undertaking any legitimate trade or industry in China, or of any arrangement which might purport to establish in favour of Japanese interests any general superiority of rights with regard to commercial or economic development in any region of China.

(3) The discontinuance of interference by Japanese authorities in China with American property and other rights, including such forms of interference as censorship of American mail and telegrams and restrictions upon residence and travel by Americans and upon American trade and shipping.

Japanese replies to this and similar foreign complaints usually follow two main lines. Patience is asked for in view of a war-time situation. At the same time it is intimated that a new situation has arisen, that Japan, Manchukuo, and China are now in a close and inseparable political and economic union, and that the Nine Power treaty, with its assurance of equal opportunity for foreign powers in China, is dead

Simultaneous British, American, and French requests for opening of the Yangtze River to foreign commercial shipping were rejected on Nov. 14 by Mr. Arita, the Foreign Minister, on the grounds that navigation was unsafe because of floating mines, that the presence of commercial shipping would hinder Japanese military operations, and that Japanese shipping on the Yangtze at the present time was restricted to troop ships and transports.

Late in September there were one or two riotous clashes between Japanese soldiers and civilians and French troops and police on the outskirts of the French Concession at Tientsin, but these passed off without serious consequences.

The League of Nations, on Sept. 30, authorized its member states to apply sanctions against Japan, as the aggressor in the Far Eastern conflict. While this resolution led to no immediate practical results, the Japanese government reacted by putting an end to the former practice of co-operation with the International Labour Office and other non-political activities carried on under the auspices of the League. (W. H. Ch.)

SIROVÝ, JAN (1885–), Czech general and politician; born in Bohemia; served as a conscript in the Austro-Hungarian army, became an architect, and practised in Warsaw. In 1914 he joined the newly-organized Czech brigade in the Russian army, was promoted lieutenant, and lost his right eye at the battle of Zborov. After the Russian revolution he commanded two divisions of the Czech legionaries, fought against the Bolsheviks across Siberia, co-operated with the allies and received a message from King George V thanking him for his services. Repatriated from Vladivostok, the Czech legionaries formed the core of the new Czechoslovak army, and in 1935 General Sirový was promoted inspector-general of the forces. In Sept. 1938, during the German-Czech crisis, he succeeded Dr. Hodža (*q.v.*) as prime minister, and prepared to resist the threatened German invasion; but as a result of the four-power conference at Munich, he was obliged to accept the German territorial demands and, shortly afterwards, those of Poland and Hungary. On Oct. 5, Dr. Beneš having resigned, General Sirový became acting president of the republic. In view of the changed situation he found it expedient to come to terms with Germany, abandoned the Soviet-Czech pact at the end of October, and in November

began to model Czechoslovakia's internal policy on National-Socialist lines On the election of Dr. Hácha (*q v.*) to the presidency at the end of the month, General Sirový and his cabinet resigned, and on Dec 1 he was appointed Minister of National Defence

SISAL, HEMP, AND CORDAGE FIBRES. The fibres grouped together as "hemp" are botanically of many origins, but a general trade distinction is commonly made between "soft" or "bast" fibres and "hard" or "leaf" fibres.

Production of "hard" fibres in recent years has risen steadily, amounting to about 602,000 tons in 1937, an increase of nearly fifty per cent in six years. Manila hemp from the Philippine Islands constituted about one-third of this total, and British East Africa, the chief producer of sisal, took second place with 122,000 tons. About 113,000 tons of henequen were produced in Mexico, and the Netherlands East Indies exported about 86,000 tons of manila, sisal, and cantala.

In contrast to the rising output of "hard" fibres, production of "soft" hemp has declined since 1930. Production is mainly centred in Europe, and the fall is due largely to the reduced supplies of the Soviet Union, which have decreased from about 270,000 tons in 1930 to 121,000 tons in 1937 In Italy, government measures have encouraged cultivation, and a peak production of 106,000 tons was reached in 1937. Yugoslavia (50,000 tons) and Rumania (27,000 tons) have also increased their production in recent years. The yield of sunn hemp in India varies considerably, total production being estimated at about 100,000 tons annually.

Trade reports from the major consuming countries indicate a general tendency towards the substitution of "soft" hemp by the "hard" fibre. For this the supply and price position has been largely responsible. The Soviet Union and Italy, the chief producers of "soft" fibres, are mainly concerned with the development of a self-sufficient national economy and are utilizing the bulk of their supplies. Sisal production in East Africa and the Netherlands East Indies is expanding rapidly, while the Philippine Islands have a large export surplus of manila; in 1937, 182,000 tons of manila were exported from these islands. Exports of sisal from British East Africa, constituting almost the entire production, aggregated about 122,000 tons, while exports from India rose to 48,000 tons.



H.M. Eastern African Dependencies]
SISAL POLING, EAST AFRICA

The United States is the chief consumer of hemp, and provides the largest market for exports from the Philippine Islands and Mexico. In 1937, imports of all hemp fibres into the United States aggregated 187,000 tons as compared with 176,000 tons in 1936. About forty per cent of the imports into the United Kingdom in 1937 (104,000 tons) were from the Philippine Islands, East Africa and India provided most of the remainder Of the other importing countries, Japan purchased appreciable quantities of manila from the Philippine Islands, but under the import restriction policy recently introduced, these purchases have been much reduced in 1938. Germany buys "soft" hemp from Italy and sisal from East Africa.

Prices of hemp fibres show wide variations in range and movement Indian hemp depreciated in value after reaching a peak in 1934, and was uninfluenced by the recovery in manila and East African grades in 1935–37. In the Netherlands East Indies and East Africa supply has outstripped demand, while the import restriction policy of Japan has also had a deterrent effect on the Philippine supply position. Prices fell sharply in the latter months of 1937, and in 1938 the market showed further weaknesses and values receded to below 1936 levels. "Soft" fibre prices generally are high in relation to those of "hard" fibres. (A. F. P.)

SKATING: *see* WINTER SPORTS.

SKI-ING: *see* WINTER SPORTS.

SKIN DISEASES. The skin, a very essential and vital organ, subject to all the influences to which the rest of the body is subject, is also exposed to external changes and injurious agents from which other organs are protected.

Skin diseases, though rarely fatal, are most distressing to the patient, who tends to regard himself as an outcast Advances in the diagnosis and treatment of these ills have added greatly to the fund of human happiness.

Like all medical diseases, skin diseases are either in the nature of pathological changes of structure, in which a specific causative agent provokes a distinctive morbid entity, or are in the nature of physiological disturbances of function, so that personal and temperamental variations from the normal are emphasized or deranged by toxic, metabolic, nervous, and psychological influences to produce "constitutional disorders".

Illustrative of progress in the field of organic diseases is the response of streptococcal infections as erysipelas and cellulitis to the sulphanilamide drugs [1].

Cure of tuberculosis of the skin and particularly lupus vulgaris, a destructive inflammation commonly affecting the face, is obtained through improved technique in Finsen light therapy or by local injections of phenylethylhydrocarpate and general ultra-violet light irradiation of the whole body, together with a salt-free diet rich in vitamins.

A broader understanding of constitutional disorders as pruritus and eczema, seborrhœic dermatitis, urticaria and psoriasis, has resulted in treatment along more general and internal lines, with less stress upon the mere application of ointments.

Nervous shock, strain, and fatigue and emotional disturbances are recognized as being responsible for many cases [2].

Light deficiency and factors of malnutrition, particularly inadequate minerals, iron, and vitamin intake or impaired assimilation of these and other essential foodstuffs through gastro-intestinal dysfunction, underlie a variety of dermatoses generally of the eczematous type [3].

Septic foci within the body determine some forms of pustular eruptions of hands and feet, seborrhœic dermatoses and sycosis.

Allergic diseases from blood-borne sensitization, as urticaria, are less common than dermatitis due to specific epidermal sensitiveness to external contacts such as to flowers, cosmetics, dyes, industrial dusts, and liquids The "patch-test", the application of a suspected irritant over a small area of skin under an occlusive dressing for a period of twenty-four hours, is used to demonstrate such epidermal specific sensitiveness to contact [4]. By this means many cases of industrial and other exogenic dermatoses can be solved, and a workman can be enabled to continue at his trade by avoiding the offending substance

X-rays and radium in *destructive* doses readily cure cancer of the skin.

There are very few constitutional disorders of the skin, however, which do not respond in a remarkable manner to the local application of X-rays in *fractional* doses. Properly controlled X-ray therapy carries with it none of the old dangers, and is widely employed. It has markedly reduced the period that a patient needs to be under treatment, and is therefore of great economic importance apart from the relief of suffering.

The general trend in dermatology has been to bring it more closely into line with general medicine as a whole and to remove it from the realm of mystery in which it was so long shrouded.

See (1) Domagk, G., 1935, *Dtsch. med Wschr*, vii, 250, (2) Goldsmith, W. N, 1936, *Recent Advances in Dermatology*, London, p. 97, (3) Sequeira, J H., 1938, *E. Afr med J*, xv, 96, (4) Sulzberger, M B, and Wise, F., 1931, *Arch Derm Syph*, N.Y., xiii, 519. (J. T I)

SMITH, HERBERT, British labour leader, died on June 16, 1938, at the age of 76. Smith, the posthumous son of a miner, was born in a workhouse and began work at the age of ten. In 1906 he became president of the Yorkshire Miners' Association, and from 1922 to 1929 was president of the Miners' Federation of Great Britain, being one of the main pillars of that body and of the miners in general during the disastrous strike of May to November 1926. His unselfish devotion to the miners' interests was paralleled only by the stubbornness which led him to prefer defeat to anything short of complete victory for his ideals.

SMITH, JOHN TAYLOR, English churchman, was born at Kendal in 1860, and died on board the S.S. "Orion" on the way from Australia to Tilbury on March 28, 1938. Ordained deacon in 1885 and priest in 1886, he was successively curate of St. Paul's, Penge, sub-deacon and canon of St. George's Cathedral, Freetown, and, from 1897 to 1901, bishop of Sierra Leone. He had been chaplain to the forces in the Ashanti Expedition of 1895, and from 1901 to 1925 was chaplain-general to the forces. In 1896 he was made honorary chaplain to Queen Victoria. His honours included the C.V.O. in 1906, C.B. in 1921, and K.C.B. in 1925.

SMYTH, DAME ETHEL MARY (1858–), musical composer, was born in London, daughter of a general of artillery. She studied at the Leipzig Conservatory, later under Heinrich von Herzogenberg, and cultivated an austere Brahms-like style that occasionally lapsed into hearty and rollicking compositions like *Hey Nonny No!* and *The Boatswain's Mate*, or pugnacious pieces like *The March of the Women*, composed for the suffragist movement, of which she was a militant member. Her two most important serious works are her *Mass in D* and *The Wreckers* (opera). She was created D B E in 1922 Further details of her early work and career may be found in the *Ency Brit*, vol. 20, p 848 In recent years she has devoted herself mainly to writing her memoirs, and her latest publications include *Female Pipings in Eden* (1932), *Beecham and Pharaoh* (1935), *As Time went on* (1935), a sequel to *Impressions that Remained*, and *Maurice Baring* (1937) On the occasion of her eightieth birthday, April 23, she gave a vivacious broadcast of her impressions and experiences

SOAP, PERFUMERY, AND COSMETICS. Technical progress in these industries has been fully maintained during the year 1938, but the uncertainty of the international political situation has undoubtedly exerted an adverse effect upon raw material markets and the merchandizing of finished products Manufacturers in many countries have found their export markets reduced to a bare minimum.

In countries that exist on a wartime basis, much research has been undertaken into the production of substitutes for oils, fats, and other natural products. This tendency has also resulted in an exhaustive study of soap substitutes and adulterants (*i e.* filling materials.)

The German tendency to split off glycerin from the natural oils and use the separated fatty acids for soap-making purposes, together with a high percentage of filling material, is now finding its followers in other parts of the world. Japanese hardened fish oil is experiencing a very considerable export market, although rice bran oil and chrysalide oil from silkworms are at present used in Japan only. Even in England, the Bradford City Corporation is producing soapstock from sewage, a process that is also being carried out in the United States.

Apart from the unremitting search for cheap substitutes, however, progress has been made in connexion with new and original products Thus, in perfumery, the ketone essentially responsible for the perfume of violet flowers has been isolated, and the cyclic acetals are now being used to replace the less stable aldehydes as "top notes" for modern perfumes. Cosmetic manufacture is undoubtedly being influenced by the technique of screen make-up—a fact which is evidenced by the new powder bases in cake form and blemish-covering sticks that are essentially modified grease-paints.

The soap industry is making continual efforts to render soap flakes and soap powders readily soluble, even in cold water. Perfumes continue to improve in quality, while the appearance of cheap perfumes in stylish containers shows that the British manufacturer is at last beginning to understand the psychology of perfume selling. Cosmetics are becoming more highly specialized—which means that the old idea of producing a complete range of preparations is no longer likely to prove successful. A year or two ago, the American influence on perfumery and cosmetic presentation was very dominant, but during the past year France seems to be the country that has made the most progress. French influences are particularly noticeable among the well-known dressmaker-perfumer concerns.

One praiseworthy sign of the times is the attention being given to health and hygiene by the majority of beauty parlours and cosmetic firms generally. Fashions, films, sport and hygiene, travel, and social tendencies—all exert a very definite influence upon the perfumery and cosmetic market.

In the United States, the Federal control of advertising is taxing the ingenuity of many manufacturers. Even in

England, there is a strong feeling that certain advertising claims should not be allowed to pass unchallenged. Lord Horder's historic speech, delivered this year in the House of Lords on the subject of patent medicine advertising, has made many advertisers feel that it is high time that their affairs were put in order, before any likelihood of government intervention arises. (F. V. W.)

SOCIAL SERVICES. All the developments in Great Britain during 1938 emphasized that the basis of charitable social service is close co-operation between the state, the local authorities, and the voluntary organizations The nation's heavy commitments on defence did not result in a decrease of public expenditure on social services, and it is safe to estimate that their total cost, excluding unemployment insurance and poor relief, amounts to at least £150 millions annually.

Probably the most spectacular change in social legislation during the year was the effect of the Blind Persons Act, 1938, which decreed that, after April 1, 1938, the minimum age at which unemployable blind persons became eligible for a pension was reduced from fifty to forty, thus adding a pensionable group of 7,000 to the already existing 23,000 blind persons then in receipt of pensions totalling £585,000 a year Progress has been made too with schemes for the prevention of blindness, and the latest returns show a fall of nearly five per cent in the number of blind children under the age of five. Further, there has been no diminution in the variety of special schools provided for abnormal children, and state grants for this purpose have been fully maintained

Another active branch of social service work is the preservation of open spaces and recreation grounds for public use During the year loans sanctioned by the ministry of health to local authorities for playing fields, gardens, and parks totalled £3,772,662, an increase of more than £570,000 on the previous year ; of this total land alone accounted for £2,780,000 In addition to this expenditure 380 acres were presented either to local authorities or to the National Playing Fields Association, making a total of 5,820 acres since the Association made its first appeal in 1927. London's " green belt " continued to develop, and the total area of land acquired to March 31, 1938, was 45,000 acres, the value of which was provisionally fixed by the London County Council at £1,337,000. Some provincial cities now follow the example of London, and progress has already been made by Bristol, where a 200-acre estate has been acquired between the city's residential areas and the industrial districts of Avonmouth.

Local authorities, preservation societies, and the ministry of health are increasing their activities towards the preservtion of rural areas and the increase of the amenities of the countryside for visitors from the towns, and during the year more than ninety-six schemes of this type were submitted for approval. In some schemes an agricultural zoning is proposed, wherein nothing but agricultural buildings are to be allowed except with the consent of the local authority ; in some, large private open spaces are permitted ; and in others, residential development is to be controlled only by a low density zoning—one house to five, ten, or even 25 acres. Government contributions towards housing since the date of the Armistice to March 31, 1938, amounted to £193,438,059, the state grants for the last year in this period totalling £14,617,543, a record under the various Housing Acts passed since the close of the War.

The most outstanding point in connexion with these manifold activities is undoubtedly the maintenance at so high a level, and in spite of the rapidly increasing expenditure on defence, of public contributions to schemes for increased amenities, assistance, and so forth, many of which a generation ago would have been regarded as luxuries, but all of which are now accepted as necessary for a normal standard of living in Great Britain. (V. B)

United States. The continuation of the depression meant that the relief needs of the people were very great in many parts of the U.S A , and the increased number of unemployed created a grave situation, particularly in the urban industrial centres Federal aid for relief continued to be provided only through the Works Progress Administration, and the burden on the states and minor local authorities remained very heavy Since many of these local governments were unable, and some of them unwilling, to carry this burden adequately, in some sections of the country destitute people have been living on the food supplies distributed as " Federal surplus commodities ", and this has meant that very inadequate supplies of food have been available for those in need. There was therefore an increasing demand that the Federal government must not only support a work programme, but that a Federal grant-in-aid for direct home assistance must also be provided Direct relief was granted to a considerable number of farm families under the Farm Security Administration. In the Senate a special (Byrnes) committee to investigate unemployment and relief issued voluminous " hearings " and a majority and minority report.

Some improvement in the situation resulted, however, from the transference of large numbers of families and individuals to the three important public assistance services under the Social Security Act. The Federal and state governments, with help in most states by the minor local authorities, together provided during the first ten months of the year 1938, $322,066,424 for old-age assistance, $76,257,955 for aid to dependent children, and $8,988,428 for assistance to the blind. The relief situation was also somewhat alleviated by the fact that 21 states were paying unemployment compensation in 1938.

In 1937, five states had enacted new civil service legislation, and during 1938 these new systems were in process of being integrated into the welfare programmes. In a number of other states some extra-legal " merit " systems were attempted, which in time will help to improve the welfare services.

The President's Inter-departmental Committee on Health Services assembled an important conference in Washington in July and the Committee's comprehensive plans were adopted and recommended for enactment by Congress.

The recommendation of the President's Committee on Administrative Management for the establishing of a Federal department of public welfare was finally not passed by Congress, although it was considered during the 1938 session. If such a department were created a substantial reorganization of the Federal social services would be called for and there is, therefore, a widespread interest in this development. (*See* also CHILD WELFARE ; NATIONAL INSURANCE ; PUBLIC HEALTH SERVICES.)

SOCIETIES, LEARNED. The activities during 1938 of the more important Societies in various countries are reviewed below. (*See* also BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE)

Great Britain. The British Medical Association held its 106th meeting at Plymouth on July 19 and following days. The principle of free choice of doctor under National Health Insurance was stressed, and proposals for a general medical

service for the nation were outlined. Other topics dealt with were fees for consultative work, education of the public in the use of the doctor, and countering credulity on the part of the public

In September the Faraday Society held an important series of discussions on "Luminescence" at Oxford. Luminescence is of particular interest at the present time, as it forms a testing ground for recent theories of the physical properties of solids and the nature of chemical reactions.

The Linnean Society celebrated its 150th anniversary on May 24 The proceedings, which lasted three days, were attended by many distinguished naturalists.

An appeal for financial support has been issued by the National Institute of Industrial Psychology, whose important work in the field of problems of environment, working conditions, labour grievances, and vocational guidance is being cramped by inadequate resources and accommodation For immediate needs and future progress endowment in the region of £250,000 is required.

The Royal Geographical Society has reported that of the expeditions in which it is interested, several have returned from the field, including the British Graham Land Expedition, the Shagsam Expedition, which has filled many gaps in the map of the Karakorum range, and several archæological expeditions The special publication of the year was the second volume of *Hints to Travellers*, which promises to be a best seller.

At the Royal Institution, about 100 lectures and discourses on all branches of science, art, and literature have been well attended. A Christmas course of juvenile lectures on "Young Chemists and Great Discoveries" was delivered by Professor J. Kendall. The installation of a talking cinema projector has increased the scope of the lecture programme In the Davy Faraday Research Laboratory, under the direction of Sir William Bragg, the work has dealt mainly with problems of the structure and physical properties of solids, with emphasis on X-ray analysis.

The Royal Society has authorized the expenditure for scientific research of £40,000 for the year ending in October. In connexion with oceanography the Society commissioned a research vessel, the auxiliary ketch "Culver", which sailed for Bermuda on July 15. Other research promoted during the year includes investigation of forces of gravity off the western shores of Britain, Ireland, and France, and seismic investigations in Dominica. A new periodical, *Notes and Records*, has been instituted for publication of news of the Society. Discussions and meetings have dealt with plant virus research, plastic flow in metals, turbulence in fluid motion, and cosmic rays.

The Royal Society of Edinburgh (in conjunction with the Royal Physical Society) awarded the Bruce Memorial Prize to D. A. Berry for work in Spitzbergen, including survey in New Friesland and completion of the map of North-East Land. Tercentenary celebrations of the birth of James Gregory were held in July in Edinburgh, and at St. Andrews University, where Gregory made astronomical observations.

The Associated Learned Societies of Liverpool and District held a triennial exhibition on Oct. 22 to illustrate progress in science and education. Co-operation was received from the Institute of Chemistry, the Society of Chemical Industry, and the British Association of Chemists. Lectures and demonstrations were arranged illustrating recent advances in the study of television, population problems, artificial silk spinning, dyeing, and colour photography.

Two new societies of importance have been founded: (*a*) the London Scientific Film Society, which is the outcome of interest aroused by the Association of Scientific Workers and aims to promote a proper understanding of science by the public; (*b*) an Institute of Economic and Social Research, which, with a guaranteed income of £10,000 per annum for five years, aims to carry on research into the facts and problems of contemporary human society.

Australia and New Zealand. The first number of the *Australian Journal of Science*, issued by the Australian National Research Council under the auspices of the Australian and New Zealand Association for the Advancement of Science, has been published. It is intended to produce six numbers per annum, and the journal is planned to supply the need for publishing accounts of ever-increasing scientific work in Australia. In future *Australian Science Abstracts* will appear in this Journal.

The eleventh annual report (1936–37) of the Department of Scientific and Industrial Research of New Zealand refers to the establishment of a Bureau of Social Science Research; plant research has been reorganized, and steps have been taken to establish a Soil Research Bureau.

Canada. A committee to study the organization of medical research has been established by the National Research Council. Its functions are to receive suggestions for requirements in medical research, to consider by whom investigations might best be carried out, to correlate and issue information. It has been suggested that this committee might lead to the formation of a medical research council similar to that existing in Britain.

The annual meeting of the Royal Society of Canada was held in Ottawa, May 24–27, when nearly 200 papers were presented on subjects dealing with chemistry, physics, biology, and medicine. Twelve new fellows were appointed, and Dr. Victor Morin was elected president in succession to Professor A. G. Huntsman, who delivered an address on "The Problem of Life."

France. The Association Française pour l'Avancement des Sciences held its annual meeting at Arcachon, Sept. 22–27, under the presidency of M. Guilliermond. The main subjects for discussion were the oyster, the marine pine and its derivatives, the pigments of living beings, the biology and protection of fresh water.

Nov. 14 marked the fiftieth anniversary of the Pasteur Institute of Paris (which was established as a result of international subscription), but the celebrations were postponed till Dec. 27, the anniversary of Pasteur's birth. In connexion with the jubilee, the French Association of Microbiologists held the first meeting since its establishment in 1937.

Greece. The Greek Archæological Society celebrated its centenary at Athens on Oct. 23, when the King of the Hellenes, president of the Society, delivered an address of welcome to delegates and representatives of Greek and foreign universities and learned societies.

India. The Indian Science Congress Association held its jubilee meeting in Calcutta, Jan. 3–9, Sir James Jeans presiding. Delegates to this brilliant gathering included a party of about 100 distinguished British and foreign scientists. During the same week practically all the main learned societies of India held their annual meetings in Calcutta.

In a symposium held at Poona in July under the auspices of the National Institute of Science weather prediction was discussed in all its aspects. The opinion was expressed that it seems doubtful whether statistical methods applied to surface data will improve seasonal forecasting, and that

the best hopes for improvement lie in the study of the upper air

The All-India Adult Education Committee, together with the National Adult School Union, has issued an appeal for assistance in the development of adult education. A committee has undertaken to investigate all adult education activities in India and to call a conference early in 1939.

Italy. The Pontifical Academy of Sciences met on Jan 30 in the Vatican to honour the memory of Marchese Marconi and Lord Rutherford. It has been considered desirable that the Academy should not restrict its activities to publication of individual communications, but should take advantage of its scientific independence of race or creed to strengthen the bonds between the various sciences. An annual prize is announced, worth 25,000 lire and to be known as the Pius XI prize, to be awarded for distinguished contributions to scientific knowledge.

The Volta Foundation Congress met in Rome in the beginning of October under the auspices of the Italian Royal Academy for discussion of questions relating to Africa. In the final session the opinion was strongly expressed that some permanent organization should be formed for the study of international co-operation in the study of problems of settlement, education, and disease, on the solution of which depends the advancement of Africa and her peoples.

The 27th meeting of the Italian Association for the Advancement of Science was held at Bologna, Sept. 4–11

Poland. Poland regained its independence in 1918, and 1938 has marked the completion of twenty years of constructive work. Advances in science are recorded in *Nauka Polska*, the annual publication of the Mianowski Institute for the encouragement of Science. Emphasis is laid on recent work in phytopathology, a branch of applied biology of prime interest to Poland, which has a large agricultural industry.

South Africa. The South African Institute for Medical Research has issued a report on recent work which has included continuous study of bacteriology and epidemiology among native miners. The use of prophylactic pneumonia vaccine is increasing. The preparation of anti-plague serum by means of avirulent living vaccine has been shown to yield a serum of greater potency than by any other method.

It is reported that a national museum for Southern Rhodesia is to be instituted in the neighbourhood of the famous Zimbawbe ruins.

U.S.A. It has been said that the 101st meeting of the American Association for the Advancement of Science (Dec. 27, 1937–Jan. 1, 1938) may be remembered as the beginning of a new era in the history of the Association. Its outstanding characteristics were the spirit of co-operation among scientists of different fields, and the increasing sense of responsibility of scientists to society. Many of the leading scientists of the United States took part in symposia which ranged across the usual boundaries of the sciences. The climax of the meeting was a resolution passed by the Council inviting international co-operation of scientists in promoting peace and intellectual freedom, the resolution being the answer to a challenge thrown out by Dr. E. G. Conklin in his retiring presidential address on "Science and Ethics." The 102nd meeting of the Association was held at Ottawa (June 27–July 2), with Dr. G. D. Birkhoff as president, and, with membership 19,000 and registrations 1,100, is ranked as one of the biggest meetings of the Association. In the general and sectional programmes emphasis was laid on "Science and the Future", on which subject there were four general sessions and eighteen symposia as well as other papers. Dr. Wesley C. Mitchell was elected president for 1939. The winter meeting was held at Richmond, Va., Dec. 27–31.

Problems of oceanography are being extensively studied from the Bermuda Biological Station by the Woods Hole Oceanographic Institution with the co-operation of the Royal Society of London. The work, which was started in 1937, is proceeding along two main lines, the variability of the Gulf Stream and wind-produced movements in the surface layer.

In the work of the Carnegie Institution of Washington emphasis has been laid on the application of science to human welfare, particularly in the divisions of plant and animal biology, genetics, and embryology An expedition, organized jointly by the Institution and the South-West Museum, reports finds "of major importance to American Archæology" in Lake County, California. There is strong evidence that America had two prehistoric waves of pioneers before Folsom man.

On May 19, at the Franklin Institute, Philadelphia, a marble memorial to Benjamin Franklin was formally dedicated. The programme included three days of stately ceremony, lectures on pure and applied physics, a two-million-dollar philatelic exhibition, and exhibits contrasting science in Franklin's time with science of to-day.

The fiftieth anniversary of the Mathematical Society, which was celebrated at Columbia University in September, was unusual, in that the principal founder of the Society, Professor Thomas S. Fiske, was chairman of the committee which organized the celebrations.

The National Geographical Society has published an account of the scientific results of the record altitude flight by Major A. W. Stevens and Capt. O. A. Anderson, who ascended to 12·7 miles (*Technical papers, Stratosphere Ser.*, No. 2, N.G.S., Washington). It is reported that an aerial expedition, organized by the Society and Harvard University, has made an important discovery of vast inland ice-fields in Alaska. One thousand five hundred square miles were photographed under very difficult conditions. It has been decided to publish, at a subscription rate of 3·75 dollars, ten mimeographed lists per year covering research contained in periodicals received by the society. This current index will make available much information not otherwise obtainable through library catalogues.

In the last annual report of the Rockefeller Foundation it is recorded that the International Health Division has continued investigations on yellow fever and malaria, and has added scarlet fever and influenza to its studies. The development of radio programmes has received much attention. In addition to the customary fellowships much aid has been given to exiled German scholars.

Two important expeditions backed by the Smithsonian Institution have taken the field, one to the Lindenmeier site in north Colorado to continue excavations related to Folsom man, another to the Aleutian Islands, to determine the character and course of early migrations of man to the American Continent.

U.S.S.R. The twentieth anniversary of the revolution was marked by the Academy of Sciences by the issue of special numbers of its periodical (published early in 1938) containing brief accounts of work during the period. The number of institutes, museums, and libraries connected with the Academy has grown from thirty to well over a hundred.

The progress of Soviet fishing was graphically illustrated

by an exhibition in Moscow in June in the new building of the Institute of Sea Fisheries and Oceanography The development of the industry has caused an increase in the study of oceanography, for which there are now scores of institutes and stations as against three before the revolution.

The following international conferences were held during the year: *Anthropology and Ethnology*, Copenhagen, August; *Applied Mechanics*, Cambridge, Mass., September; *Astronomy*, Stockholm, August; *Chemistry*, Rome, May, *Cytology*, Zürich, August, *Engineering*, Glasgow, June, *Entomology*, Berlin, August; *Forensic and Social Medicine*, Bonn, September; *Geography*, Amsterdam, July, *Goitre*, Washington, September; *Horticulture*, Berlin, August; *Light*, Davos, July, *Locusts*, Brussels, August, *Management*, Washington, September; *Ornithology*, Rouen, May, *Physiology*, Zürich, August; *Psychiatry*, Oxford, July, *Radio-æsthesia*, Paris, November; *Timber*, Brussels, September; *Tropical Medicine*, Amsterdam, September. (D. N. L.)

SOIL. Under this heading are treated certain problems of current interest in connexion with the soil

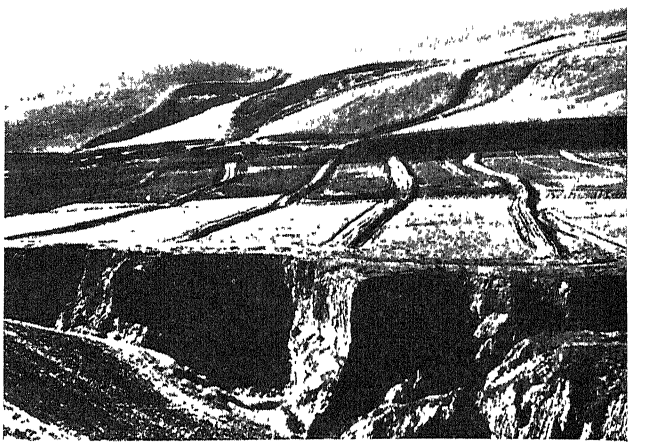
Soil Fertility and Plant Nutrition. No new general principles have been added to those already described in the *Ency. Brit.* vol. 20, p. 934, but much work has been done in recent years in studying means of adjusting the actual conditions in the soil to the optimal requirements of the plant. Fortunately the latter are fairly wide: the narrow limits formerly assumed are now known to be incorrect, and the optimal conditions for any one crop in a normal rotation are, with some exceptions, compatible with those of most of the other crops.

These adjustments are of particular importance, because excesses of the ameliorating substances are now known to be not merely wasteful, but to do harm in certain conditions

The adjustment of water supply to the requirements of the plant is of special importance in irrigated regions, and Veihmeyer and others in California have worked out methods by which this can be done.

In England, R. K. Schofield at Rothamsted, Hertfordshire, has devised a scale for expressing the water relations of the soil, which corresponds in some ways to the pH scale for expressing soil acidity.

The reaction of the soil is of great importance in determining its fertility. In a fertile soil the clay is combined with bases (cations) chiefly calcium (eighty per cent or more). If hydrogen forms more than a certain rather low proportion of the total cations, the soil becomes acid and for many plants infertile. The acidity is removed by the addition of lime, but it is difficult to estimate the amount of lime needed, because the soil acids are more or less heavily "buffered". The nature and properties of the "buffer" material are being studied, but in the meantime various empirical methods have been devised for estimating the quantity of lime necessary. It is important to know this, because excess of lime involves unnecessary expenditure by the farmer, it is liable to greater loss by leaching than a more nearly accurate amount would be, and it does positive harm by throwing out of action some of the elements such as boron and manganese needed by the plant. The optimal soil reaction differs somewhat for different crops, but in general this is a matter rather of disease than of plant growth. For clover the soil should be neutral, but for potatoes and for wheat slightly acid, not because either crop grows better in acid conditions, but because potatoes are less liable to the attack of the common "scab" disease (*Actinomyces chromogenus Oospora*), and wheat to the attack of "take-all" fungus (*Ophiobolus graminis*).



U S Soil Conservation Service]
TERRACING TO SAVE A VALLEY FLOOR FROM DESTRUCTION BY A GULLY, 60 FT DEEP, IN FOREGROUND. (NOTE GULLYING IN THE HILLSIDE IN BACKGROUND)

Some of the most interesting of the recent work is concerned with elements essential for the healthy growth of plants, but needed in very small amounts only: excess is liable to do harm. The best known is boron, shown by K. Warington in 1923 to be needed, deficiency of which causes certain pathological conditions now well known in sugar beet, swedes, apples, and other crops. Boron deficiency is widespread, and is recorded in Great Britain, New Zealand, the United States, and various Continental countries; it is easily remedied by the addition of small quantities of borax, 25 lb. per acre, to the soil; larger amounts may be injurious.

Copper is also needed in small amounts, particularly on organic soils. This was first demonstrated in the Florida Everglades by Allison. Copper deficiency is particularly noticeable on reclaimed moorland soils in Holland and Germany, hence its German name *Urbarmachungskrankheit*. Small dressings of copper sulphate are a complete remedy. Zinc is needed for certain plants, especially tung, but whether the need is widespread or very restricted is not known.

Two other elements come into another category. Iodine is necessary for the healthy growth of animals and men. Vegetables or herbage deficient in iodine are, therefore, of less value than those containing the normal quantities. Observations in Australia and New Zealand indicate that animals also need minute quantities of cobalt, and if this is deficient in their food, they suffer. It is not known, however, whether these two elements are of importance to the plant.

Sulphur has long been known to be an essential to plant growth, and recently the symptoms of sulphur deficiency have been recognized in tea plantations in Nyasaland and in other crops.

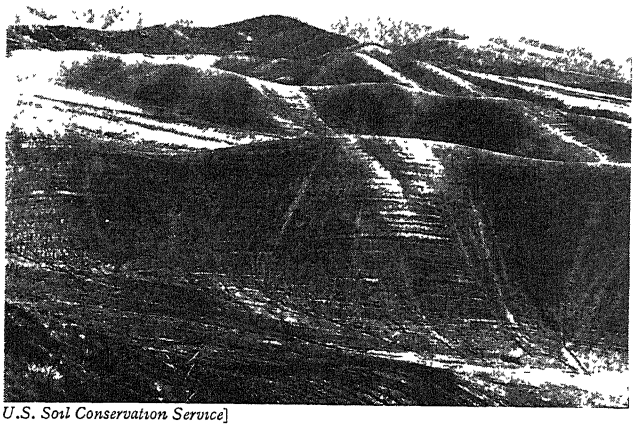
See E. J. Russell, *Soil Conditions and Plant Growth*, 7th Edition (1937); also *Technical Communication, No.* 31, Imperial Bureau of Soil Science (Harpenden, 1934).

Soil Erosion and Conservation. Erosion may result from wind action, when it is called "soil drifting", or water action, when it may be either sheet erosion, which occurs over wide areas on slightly undulating land, or gully erosion, which is much more local and intense, and occurs on sloping land. Erosion is essentially a modern problem, resulting from the introduction of Western cultivation methods into new regions.

Wind erosion has become serious in Saskatchewan and in

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U.S. Soil Conservation Service]

SHEET EROSION OF A HILLSIDE AFTER A SINGLE STORM

parts of Manitoba and Alberta, where it has been intensified by a sequence of dry years. Africa affords notable examples of sheet and gully erosion In South Africa the gullies or "dongas" began to form when the veld was occupied for pasturage: the animals ate off the vegetation cover, and by following always the same track to the water supply, they formed a beaten depression where the rainwater could not soak in but ran off, so starting a gully In East Africa, especially in Kenya, there has been much erosion in the last twenty years, the settlers' methods and the consequences thereof having been very conducive to soil losses; but no part of Africa that has been exploited by the white man has escaped. In Australia the deforestation of the head water regions of the Murray river system, and in India the over-grazing of forest glades and the cultivation of the hill slopes, have led to much erosion. Erosion also occurs in many parts of Russia, in Italy, and in other Mediterranian regions.

The remedies so far adopted fall into the following groups:

1. *Restoration and Maintenance of Vegetation Cover.* Forests should not be unnecessarily destroyed, and grazing of trees and bushes by animals should be controlled (India, Africa). Single cropping systems, especially of maize, cotton, tobacco, and wheat, are bad: rotations are better, and grass is best of all, but it must not be overgrazed (Africa). Unploughed fallows are preferable to cultivated fallows, and they should be inserted in strips in the cultivated areas (W. Canada).

2. *Reduction of "Run-off" of Water.* Cultivations should be along and not down the slope: land should be terraced either by the broad "Manuam" or "Nichols" terraces of the United States, the "bunds" of India, or the walls adopted by the vinegrowers of Portugal, Italy, and other European or Eastern countries.

3. *Protection against Wind.* Belts of trees should be established as wind breaks. (*See* also FORESTRY AND REFORESTATION)

In the British Empire the carrying out of the necessary measures often presents grave administrative difficulties, as various races or tribes have treaty rights of grazing and of cultivating which were innocuous in the times when populations were small, but have become very harmful now that the population under British rule has so much increased. These difficulties account for some of the delay in dealing with the problem.

See G V Jacks and R. O Whyte, Imperial Bureau of Soil Science, Rothamsted Experimental Station, *Technical Communication, No 36*, 1938, *Soil Conservation*, official organ of the Conservation Service of the United States Department of Agriculture, F A Stockdale, *Emp Jour. Expt. Agric*, 1937, 5, 281. (E. J. R)

In the United States, where soil erosion and conservation are major problems which have received particular attention, it is stated that according to 1938 estimates, of the 415 million acres of land in cultivation, as given by the 1935 census, 76 million acres were not suitable under the price levels that have obtained since 1920 Of the remaining 339 million acres, more than half was eroding or making inadequate returns under current methods of management, yet all can be used without erosion with practices demonstrated to be practical for owner-operators. In addition, some 51 million acres not used for crops could be used under current practices, whereas if good practices were followed, about 108 million acres could be added, to make a total of 447 million acres of potential crop land These figures do not include large areas of range land, unsuitable for cultivation, but important to the livestock industry, on some of which erosion has become a serious problem; or areas of cut-over forest land and abandoned farm land, where erosion menaces adjacent farms or contributes to floods and the rapid silting of streams and reservoirs.

The Department of Agriculture greatly increased its efforts in soil conservation during 1938, conducting demonstrations covering more than 500 separate areas in all parts of the country, on small watersheds that can be treated as units, and developing a system of subsidies for those farmers practising good husbandry. One Federal agency besides the Department—the Tennessee Valley Authority—made a co-ordinated attack on the problem of water and land conservation in a large watershed.

SOKOTRA: *see* ADEN.

SOMALILAND, BRITISH. The British protectorate is a small portion of the Somali country. It is sparsely inhabited by Mohammedan tribesmen, who are mostly nomadic. No missionaries have been allowed in the country, but an exception has been made in the case of work among the Abyssinian refugees. Educational facilities are practically confined to a government school. Berbera and Zeila are important as ports of entry for Italian East Africa. In 1937 an Anglo-Italian agreement was concluded regarding the transit of merchandise which will facilitate the development of Abyssinia: tribal watering and grazing rights are also regulated by the same measure. A system of motor transport financed by both countries has been established between Harrar in Abyssinia and the coast.

(J. L. K)

Area and Population:
Area *c.* 68,000 sq. miles.
Population (census 1931): Native Somalis 344,700; coloured 2,615; (est. 1937) Europeans 75.

Governor. Maj. Sir A. S. Lawrence, K.C.M.G.

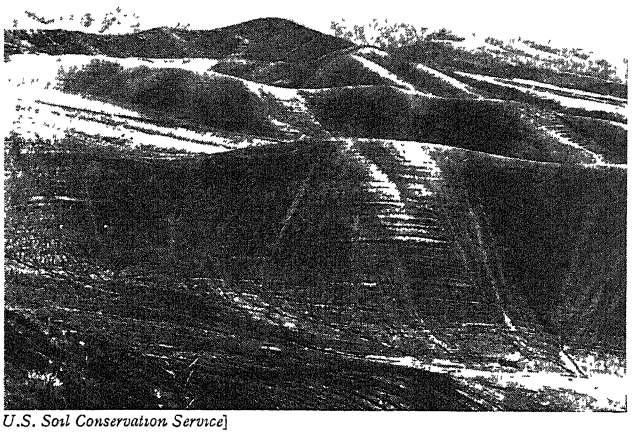
Religion. Mohammedan.

Production (export figures) 1937:

Gums and Resins	12,953 cwt.
Guano	7,259 cwt.
Skins, number	1,519,614
Sheep and Goats, number	116,926

Overseas Trade 1937:
Imports £685,441.
Exports, domestic, £286,821; Re-exports, £2,163.

Roads: open to wheeled traffic 2,000 miles.



U.S. Soil Conservation Service]
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Overseas Trade 1937:
Imports £685,441.
Exports, domestic, £286,821; Re-exports, £2,163.
Roads: open to wheeled traffic 2,000 miles.

Finance :
Revenue, total 1937 £214,075 ; (est. 1938) £196,089.
Expenditure „ „ £222,578 , „ „ £226,903.
Public Debt (Dec 31, 1937) . . . £236,000.
Education. Elementary : schools, 3 ; scholars, 202.

SOMALILAND, FRENCH. Traffic on the Addis Ababa railways and in the port of Jibuti diminished in 1938, chiefly by reason of the difficulty experienced by Italians in obtaining foreign currency. Nevertheless, the colony has undertaken the construction of a road-bed which should be finished in 1940, and of oil-fuel tanks which were ready for service at the end of 1938.

The Somalis' love of money and their personal rivalries make them particularly susceptible to the foreign propaganda which is being vigorously carried on both at Jibuti and among the desert nomads. Governor Alype tried to end the traditional conflicts by reconciling the Somalis and the Danakils, leaders of whom signed a solemn pact of friendship on March 16. Governor Deschamps, appointed in May, continued this policy, whose results were seen in manifestations of loyalty to France on the morrow of the Nov. 30 demand for French Colonies raised by deputies in the Italian Chamber. (C. A. J.)

Area and Population :
Area 8,380 sq. miles.
Population (est. Dec. 31, 1936) 46,000 (Europeans, 1,200).
Chief Town : Jibuti (capital and port).
Governor. M. Deschamps.
Overseas Trade 1936 :
Imports . . . . . 147,584,000 francs
Exports . . . . . 83,800,000 „
Railways 1937 : 56 miles (French section, Jibuti–Addis Ababa line)
Finance 1938 :
Revenue, local (est.) . . . 47,148,400 francs
Expenditure, ordinary (est.) . . 24,248,400 „
„ extraordinary (est.) . 22,900,000 „

SOMALILAND, ITALIAN : *see* ITALIAN EAST AFRICA.

SONGS, POPULAR. Contrary to general impression, no popular song of the year 1938 sold as many as 400,000 copies, as compared with the possibilities of one or two million not so long ago. The popular-song writer in America is to-day chiefly dependent on the blanket royalties he receives from the American Society of Composers, Authors, and Publishers, which issues annual licences to users of such music, giving unlimited rights to public performance. Radio, and the pirated song sheets offered by racketeers with amazing effrontery have effectually killed the sale of printed music of the popular type. In this unique situation, the work of the American Society has been of inestimable value.

Reports of the jobbers of popular music, as tabulated by *Variety*, the official spokesman of American "show business", indicate a general agreement of comparative sales with the public response summed up in the *Hit Parade* of radio. Cole Porter's " Rosalie " and the pseudo-Yiddish " Bei mir bist du schoen ", both left-overs from 1937, led the procession during the early weeks of 1938.

The surprise of the year was Nick Kenny's " Gold Mine in the Sky ", a deliberately " corny " song, based on a Foster melody, which outsold all its competitors, even though it never reached the top of the *Hit Parade*. It is also surprising to find that the full score of the charming *Snow White* music, by Frank Churchill, actually sold more copies than any individual song of the year. " Whistle While You Work " was the first individual hit from this amazing motion picture, but the " Heigh Ho " marching song of the dwarfs outlasted and outsold it in the long run.

The clever " Thanks for the Memory " by Paramount's Robin-Ranger team, landed solidly among the best sellers in the first quarter of the year, to be followed by Maria Grever's " Ti Pi Tin ", a strange combination of Spanish tunes and nonsensical words, " plugged " into success by the indomitable efforts of Horace Heidt.

An encouraging sign of the potentialities of popular taste came in the spring and summer vitality of " Love Walked In ", a posthumous work from the pen of the lamented George Gershwin. Another summer hit, " Says My Heart ", showed an interesting but unquestionably accidental echo of Gershwin's long buried " Tell Me More ", with a definite debt to the Strauss " Till Eulenspiegel " and other scale tunes

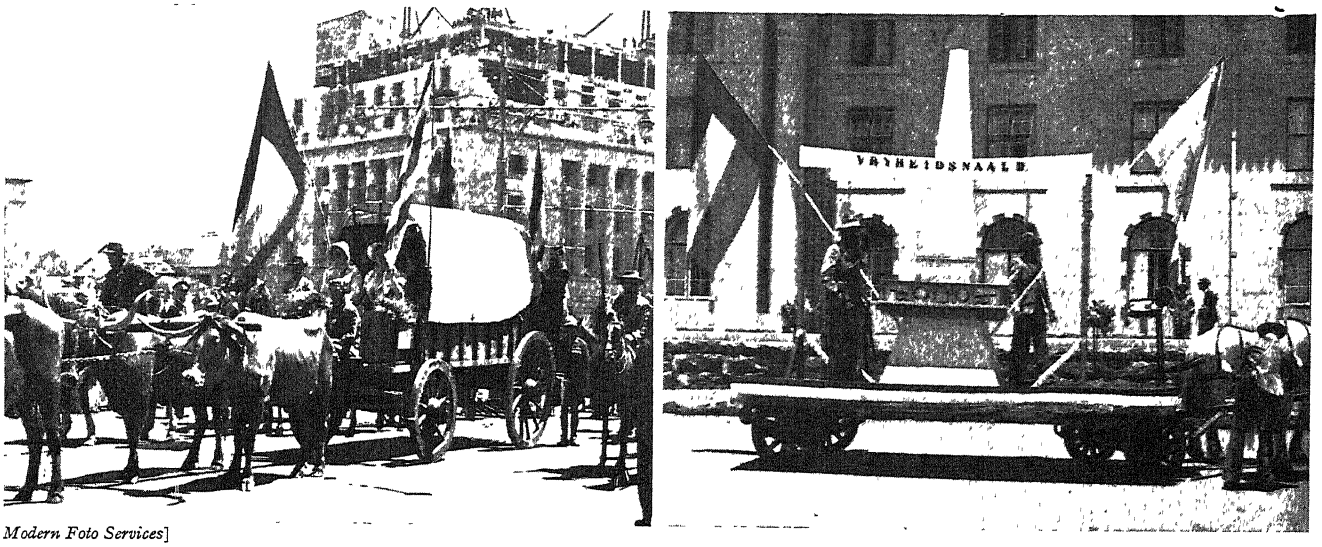
The radio commentator, Nick Kenny, scored again with his " Cathedral in the Pines ", whose success was measured in sales rather than broadcasts. " Music, Maestro, Please " was a summer hit, to be followed by one of the sensations of the year, " A Tisket, a Tasket ", a swing tune in the character of a nursery rhyme, credited to Al Feldman and the singer, Ella Fitzgerald.

Irving Berlin's " Alexander's Ragtime Band " was brought back forcibly by the motion picture of the same name, proving the vitality of a good tune dating back to 1911. The Burke-Monaco " I've Got a Pocketful of Dreams " became one of the " first fifteen " late in the year, and, as 1938 was ending, a spectacular success was scored by " My Reverie ", Larry Clinton's arrangement of a familiar Debussy piece, which was outselling all the rest as 1939 dawned.

Two of the typical absurdities of popular music deserve mention, the " Dipsy Doodle " and " Flat-Foot Floogey with the Floy Floy ", both of which found a huge public, along with the " Lambeth Walk " and other dance tunes. The swing treatment of popular songs remained in favour, and there is a continued tendency to rearrange old materials in preference to creating new melodies of doubtful value. (*See* also JAZZ.)

SOUTH AFRICA, THE UNION OF. The Union is a self-governing Dominion of the British Commonwealth of Nations. The four provinces of which it consists, the Cape of Good Hope, Natal, the Transvaal, and the Orange Free State, extend from the southernmost point of the African continent to the Limpopo. The Union holds the mandate for the administration of the former German colony of South-West Africa, but this territory has not been incorporated within the Union as a Province. There are in effect two capitals : the administrative offices are at Pretoria and the legislature sits at Capetown. The Union is officially bi-lingual : both Afrikaans and English are used in the schools.

A general election for the Union parliament took place in May 1938. The United Party gained 111 seats, against 117 in the previous parliament, the Nationalists 27 against 20, and the other parties 12 against 13. The leader of the Dominion Party, Col. Stallard, lost his seat. In July a controversy arose over an omission to play the British National Anthem at official parades. The government view is that, in the absence of an official national anthem, both " God save the King " and an Afrikaans anthem " Die Stem van Suid Afrika " will be played on official occasions. A trade pact with Italy establishing the maximum values of goods which that country will buy in the Union is under discussion. A " barter " trade agreement with Germany was renewed, and that country now takes more South African wool than Great Britain : indeed,



Modern Foto Services]

THE VOORTREKKERS' CENTENARY, PRETORIA. LEFT. THE LOUIS TRICHARDT WAGON, WHICH CAME FROM THE NORTH OF THE TRANSVAAL, CARRYING THE FOUR OLD REPUBLICAN FLAGS. RIGHT: REPLICA OF THE "NEEDLE OF FREEDOM" MONUMENT ERECTED TO THE MEMORY OF THE VOORTREKKERS AT KRUGERSDORP

German trade with the Union has now nearly reached its pre-war level.

Mr. Fourie, formerly minister of commerce and industries, who was defeated in the general election, was appointed by General Hertzog to the Senate to represent non-European interests on the resignation of Senator Thomson. This action led to the resignation of Mr. J. Hofmeyr, the minister of mines, education, and social welfare, who objected to what he considered to be a violation of the constitution. He alleged that Mr. Fourie did not possess the qualifications for his new position. Mr. Sturrock, minister without portfolio, also resigned for the same reason.

The centenary of the Voortrekkers was celebrated by sending out expeditions of wagons following the routes of the great trek. These demonstrations have been accompanied by a display of nationalist feeling and culminated in Pretoria on Dingaans day (Dec. 16).

The Czechoslovak crisis brought again to the front the question of South Africa's position in the event of the United Kingdom being involved in war. General Hertzog restated the position of the Union; the decision would, he said, be one for the South African parliament to take. The Union government gave complete support to the British government in its efforts for peace.

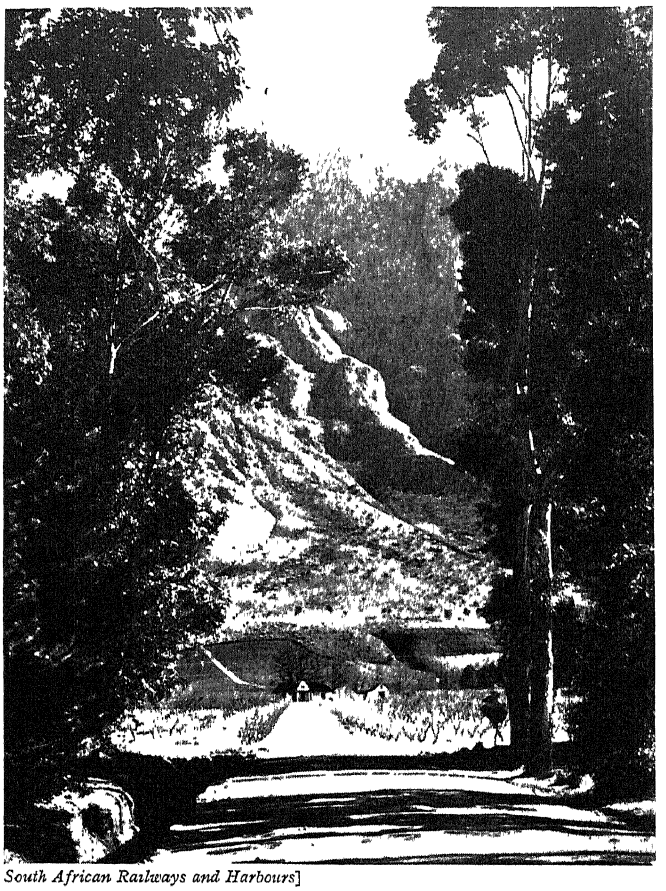
The Representation of Natives Act of 1936, involving the abolishment of the native franchise in the Cape, is the expression of a comprehensive native policy aiming at the delimitation of the sphere of the native people in the social and political fields. The Native Representatives Council met for the first time in Dec. 1937: its deliberations showed that as a consultative body it gave considerable promise of usefulness in the future. To implement the Native Trust and Land Act of 1936 it is proposed to spend £10 millions on the acquisition of additional lands in the native reserves. A solution for the problems of poverty and malnutrition in native areas, and the shortage of native labour and migration to the towns, is sought by the improvement of native agriculture, and in the restriction of the numbers of natives resident in the towns. By 1936 the urban native population was over 1,000,000, approximately one-fifth of the total native population, and a recent survey of some 41 towns showed that 72 per cent had no intention of returning to the native areas. The Native Land Amendment Act of 1937 gives wide powers for the restriction of entry and removal of surplus population. A census of urban natives as a preliminary to administrative action was successfully carried out during 1938.

Giving evidence to the Native Labour Committee, Dr. Cluver, the Chief Health Officer, asserted that many of the native population were not in a position to obtain a sufficiency of protective foods; also district surveys and investigations in native territories show a marked deterioration in the health of the natives. The mining industry is largely dependent on native labour from neighbouring territories: the average number of natives employed in the mines in 1937 was 313,734, of whom some 150,000 came from outside the territory: there are decreases in the recruitment of Portuguese and local natives, but an increase from northern countries owing to an experiment in the employment of tropical natives.

Early in 1938, Mr. Pirow, the defence minister, announced details of a defence programme to include the erection of an ammunition factory in Pretoria, the construction of artillery equipment in the Union and the continuation of the mechanization of the army. The Burgher Force, additional to the Active Citizen Force, is to be increased to 10,000. The improvement of the Simonstown naval base and Capetown harbour (*see* CAPETOWN) is also contemplated. In Sept. 1938 a plan to spend £6 millions on defence by 1942 was decided upon, £1 million of which would be allocated to coastal defences including the development of Robben Island as a fort. The calibre of the main coastal batteries at the Cape and Durban is to be increased from 9·2 in. to 15 in.; flying schools are to train 1,000 pilots, and the military plan aims at three active citizen force divisions numbering 67,000 and a further total of 70,000 in special defence rifle units. Mr. Pirow visited England and the Continent in connexion with the scheme.

The question of the return of colonies to Germany has aroused general opposition to any suggestion of the surrender of the mandate for South-West Africa (*see* SOUTH-WEST AFRICA).

In August Mr. Havenga, the minister of finance, announced a surplus of over £4 millions for 1937–38, but estimated a small deficit for 1938–39. He considered that the country must give up the notion that the rapid expansion of the last few years will necessarily continue. A slight falling off of mining taxation was foreshadowed, since



South African Railways and Harbours]
FARMHOUSE IN THE HEX RIVER VALLEY, CAPE PROVINCE

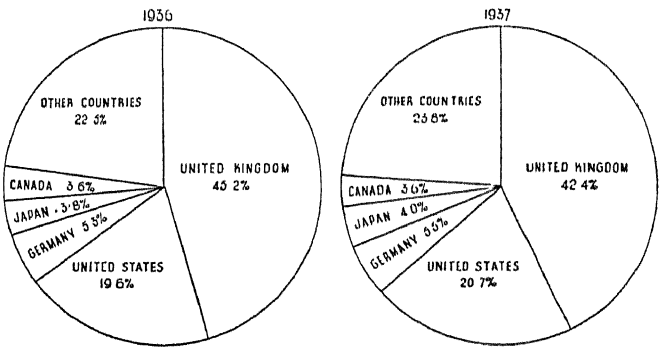
the heaviest producers have passed their peak, while the production of new mines has not yet filled the gap. The government-owned railways and harbours continue to show a profit. the surplus for 1937 was £320,000 · the purchase of rolling stock to the value of about £10 millions is contemplated. (J. L. K.)

Area and Population :
Area 472,550 sq. miles (including Walvis Bay 430 sq. miles).
Population (est. June 30, 1938) 9,979,900 (Europeans, 2,081,400 ; Native, 6,870,900 ; Coloured, 800,000 ; Asiatic, 227,600).
Chief Towns (pop. census 1936) : Johannesburg (519,384), Capetown (344,223), Durban (259,606), Pretoria (128,621), Port Elizabeth (109,841).
Governor-General. Rt. Hon. Sir Patrick Duncan, G.C M G.
Languages. English, 40 per cent ; Afrikaans, 56 per cent.
Religion. European population : Christian (Dutch Reformed Churches, 50 per cent ; Anglican, 18 per cent ; Methodists, 6 per cent ; Presbyterians, 5 per cent).
Production 1937 :

Wheat	276,400	metric tons
Barley	25,200	,, ,,
Oats	84,800	,, ,,
Maize	1,644,000	,, ,,
Potatoes (1936)	183,300	,, ,,
Cane Sugar, refined	462,200	,, ,,
Tobacco (1936)	9,400	,, ,,
Wine (,,)	1,255,000	hectolitres
Wool	104,300	metric tons
Coal	15,491,000	,, ,,
Asbestos	25,900	,, ,,
Gold	11,734,575	fine oz.
Pig Iron	276,000	metric tons
Steel (1936)	248,000	,, ,,
Chrome Ore	76,500	,, ,,
Diamonds	1,030,434	metric carats
Manganese Ore	268,800	metric tons
Silver	32,400	,, ,,

Cattle, number European owned (Aug 31, 1936) 5,911,780
Sheep, ,, ,, ,, (,,) 35,797,187
Industry and Labour :
(Census 1935–36) Establishments, 9,655 , Employees : Europeans 128,905, Others 174,562 , Value of Gross Output, £150,378,000 , Net Output, £70,640,000
Index of Employment : av. 1929 100. (Average 1936) 124·2 , (Average 1937) 131·6 , (End of July 1938) 138·6.
Overseas Trade :
Imports, total (1938) £95,868,000
Exports, domestic (,,) £103,949,000
(Jan.–Sept. 1937) Imports £76,353,679 ; Exports £92,596,783.
(Jan.–Sept. 1938) Imports £71,248,257 ; Exports £72,940,836.

SOUTH AFRICA IMPORT TRADE



Communications :
Railways (March 31, 1937), incl. S.-W. Africa, 13,620 miles
Roads (1936–37), fit for motor traffic . 83,801 ,,
Airways (1937), including S.-W. Africa services : passengers carried, 18,498 ; freight and mails carried, 1,589,451 lb. ; mileage flown, 1,100,076.
Shipping, vessels entered (1937) : number, 6,123 ; tonnage, 24,001,135.
Shipping, vessels cleared (1937) : number, 6,119 ; tonnage, 23,965,894.
Finance and Banking :
Revenue (est. 1938–39) £41,794,000
Expenditure (,,) £42,846,000
Public Debt (March 31, 1938) £262,617,905
Notes in Circulation (Dec. 9, 1938) £17,458,000
Gold Reserve (,,) £26,724,000
Exchange Rate £100 S.A. = £100 stg.
Education 1936 :

State and State-aided : European :	Schools	4,609
,, ,, ,, Native :	,,	4,540
,, ,, ,, European :	Scholars	375,157
,, ,, ,, Native :	,,	500,130

Higher, average number of students . 8,358
Miscellaneous 1937 :
Motor vehicles licensed : cars and taxis, 281,981 , buses, vans, and lorries, 42,103 ; cycles, 27,485.
Wireless receiving-set licences . 166,344
Telephones—instruments in use . 157,188
(W. H. W.)

SOUTH AFRICAN LITERATURE. The year of the Voortrekker Centenary Celebrations was not unnaturally characterized by an outburst of historical writing relating mainly to the Voortrekker period—descriptive history, biography, and drama ; and the major part of this is written, not unnaturally, in Afrikaans.

Afrikaans. The Van Riebeeck Society published the Journal of van Reenen, and the University of Stellenbosch Franken's interesting account of the founder of systematic mycology, C. H. Persoon. Leipoldt issued his successful *Life of Van Riebeeck* in Afrikaans, and Preller prepared a much-needed new edition of the important *Diary* of that intrepid Voortrekker, Louis Trigardt. He has also written the life of another Voortrekker leader, Andries Pretorius,

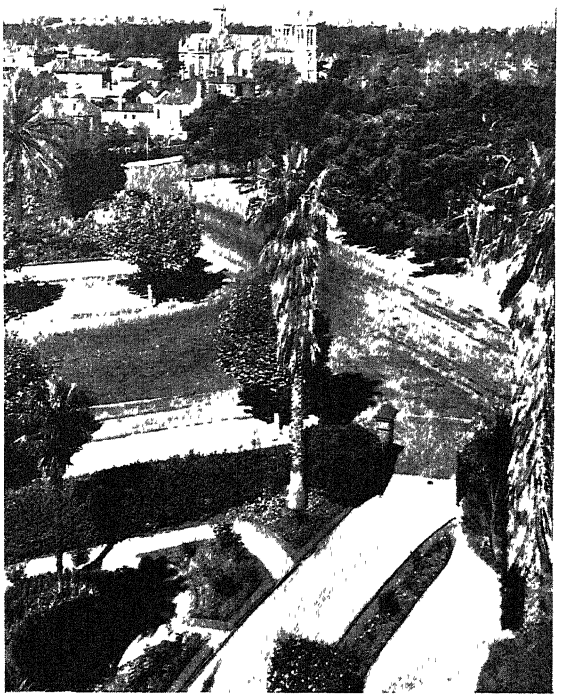
and published historical matter relating to the Anglo-Boer War Increasing interest in art is evidenced by Bouman's *Kuns in Suid Afrika* The outstanding novel of the year is C M van den Heever's *Kromburg*, which deals with life in a country town. The country theme appears in various other writers, but it can no longer be maintained that it is the only legitimate theme of Afrikaans literature A. Jonker's short stories, *Maskers*, show a welcome mastery of technique. In poetry, there is a volume of sensitive and mature verse by C M van den Heever, *Aardse Vlam*. Van Wyk Louw's *Die Dieper Reg*, on the Voortrekker theme, is not so successful as his lyrical work, and the same may be said of similar poems like Malherbe's *Die Siel van Suid Afrika* Several linguistic and scientific studies have appeared, the most important of which are A. Coetzee's *Die Afrikaanse Volksgeloof*, a study in folklore, and his sociological account of the rise of Afrikaans on the Rand. A posthumous work by Eugene Marais, who anticipated Maeterlinck in his *Soul of the White Ant*, has appeared in a study of monkeys, *Burgers van die Berge*.

Bantu. There is a growing interest in Bantu life by students outside South Africa (*African Genesis*, by Frobenius and Fox, is the outstanding work); by students in the Union (*e g* the splendid production *Mapungubwe*, a study of ancient Bantu civilization on the Limpopo edited by Leo Fouche); and finally we have the beginnings of a contribution by the Bantu themselves, *e.g.* the poems of Vilakazi.

English. Historical books and biographies predominate in the English South African output of the year. The outstanding study is that of the Voortrekkers by Manfred Nathan De Kiewiet has published a sound contribution to commonwealth questions, *The Imperial Factor in South Africa*. Hattersley has continued his Natalian studies in *Pietermaritzburg Panorama*, in honour of the Voortrekker town that celebrates its centenary in 1939, and in *Later Annals of Natal*. Reminiscences of the romantic story of the Rand, discreet and otherwise, continue to appear, as in Vulliamy's *Outlanders*. L Blackwell provides a political survey in *African Occasions*, and Devitt's *The Spell of Africa*, in reminiscent vein, shows a growing South Africanism. *The Stranger at the Gate*, by T. J. Haarhoff, deals with the attitude to the foreigner in the ancient world and to-day. Fiction is represented chiefly by S. G. Millin's *What Hath a Man*, which continues her tradition of efficient, if spare, characterization, and by Nathan's novel of the Anglo-Boer War, *Sarie Marais*. Francis Carey Slater has published a notable narrative poem, *The Trek*.

(T. J. H.)

SOUTH AUSTRALIA. The state parliament, having served its extended term of five years, was dissolved early in 1938, and a general election was held on March 19. The former complicated electoral system was replaced by single-member constituencies, and only 39 members were elected in place of 46 in the old parliament. The Liberal Country party government under Mr. Butler stood on its record of conservative finance and economic success: it was assailed both by the Labour party and by a large number of Independent groups and individuals, who opposed certain aspects of its legislation, particularly the institution of licensed betting shops and the change from three-year to five-year parliaments. The results were as follows, the number of seats previously held being shown in brackets: Liberal Country party, 15 (28); Labour, 9 (12); Independents, 13 (5); Independent Labour, 2 (1). Government candidates received only one-third of the votes cast. Nevertheless, a new government was formed under the premiership of Mr. Butler, dependent on the support of five Independents. Mr. Butler later resigned in order to contest (without success) a federal seat, and was succeeded as premier by Mr. Playford. After the election Mr. Richards replaced Mr. Lacey as leader of the Labour party.



A.N.T.A.]

ANGLICAN CATHEDRAL, NORTH ADELAIDE

Economic conditions remained prosperous. The building boom in Adelaide advanced still further. Industrial developments included the sanctioning of plans for a big blast furnace at Whyalla, and the formation of a company to exploit the deposits of marine fibre in Spencer's Gulf.

(H. V. H.)

Area and Population:

Area 380,070 sq. miles.
Population (est. Dec. 31, 1937) 594,132.
Chief Town (pop. Dec. 31, 1937) Adelaide (316,860).

Governor. Maj.-Gen. Sir Winston Duggan, K.C.M.G.

Production 1936–37:

Wheat	28,714,653 bushels
Barley	4,260,462 ,,
Grapes	148,579 tons
Currants	161,858 ,,
Wool	76,604,296 lb.
Butter	20,500,000 ,,

Industry and Labour 1936:

Factories, 1,895; employees, 38,471; gross value of output, £31,904,091.
Unemployment (Trade Union returns) average (1937–38) 7·3 per cent.

Communications:

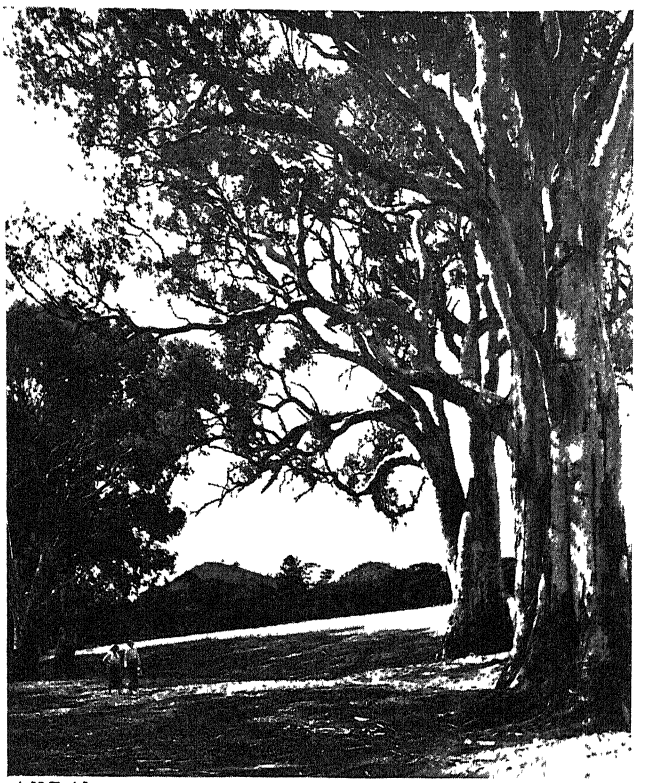
Roads (March 30, 1937) 20,380 miles fit for motor traffic
Railways (1936–37), government . . 2,529 miles

Finance 1937–38:

Revenue, £12,460,000; Expenditure, £12,336,000.
Debt outstanding (June 30, 1937) . . £106,594,164

Miscellaneous:

Motor vehicles licensed (Dec. 31, 1937): cars, 56,101; lorries, 21,498; cycles, 10,802.
Wireless receiving-set licences (Dec. 31, 1937) 105,045.



A.N.T.A.]
IN THE FLINDERS RANGES, SOUTH AUSTRALIA

SOUTH SEA AND EQUATORIAL ISLANDS. Howland island, in the Pacific Ocean, lies in latitude 0° 49′ N., longitude 176° 42′ W., approximately 1,620 miles south-west of Honolulu, Territory of Hawaii. It was discovered by Capt George E. Netcher of New Bedford, Mass., in 1842, and taken possession of by the United States in Feb. 1857, by A. C. Benson of the American Guano Company. In 1872, the U.S.S. "Narragansett" surveyed Howland island and found it to be about two miles long, north and south, one-half mile wide, eighteen or twenty ft. high, of coral formation, and with a fringing reef

Baker island lies in latitude 0° 13′ N., longitude 176° 33′ W., within thirteen nautical miles of the equator. It is saucer-shaped, about one mile east and west by 1,500 yards wide, rising steeply from the broad, flat, fringing reef, much of which dries at low tide, to a beach crest eighteen to twenty ft. above sea-level.

Jarvis island is approximately 1,500 miles south of Honolulu, in latitude 0° 22′ 37″ S., longitude 160° 01′ 37″ W. It is 23 miles south of the equator, is of sand and coral formation; 1·9 miles east and west by a little over a mile wide. It is saucer-shaped, the high beach rim enclosing a basin.

These three islands were settled in 1936, after having been uninhabited for many years, by representatives of the U.S. Department of the Interior, and colonized by placing four young Hawaiians on each island. Their presence there definitely established the sovereignty of the United States over these islands and permitted the recording of meteorological data essential to commercial aviation in the Pacific.

Canton and Enderbury islands of the Phœnix group were the subject of an Anglo-American agreement for their common use. *See* PACIFIC ISLANDS, BRITISH.

Canton island is the largest and most northerly of the Phœnix islands. Its position is 2° 49′ S., 171° 43′ W. It is a coral atoll composed of a nearly continuous narrow rim of land from fifty to 600 yards wide, enclosing a triangular lagoon about eight miles long by nearly four miles wide at the west end This rim varies in height from ten to twenty ft and is broken only by three or four lagoon entrances A licence has been granted to Pan-American Airways for the extension of its Pan-Pacific service and the construction of local facilities has begun

Enderbury island lies about 30 miles in the direction S. 67° E from Canton, its position being 3° 7′ S., 171° 3′ W. It is of sand and coral formation, about three miles long north and south, by about a mile wide. The rim averages fifteen to twenty ft high.

All of these islands are of coral formation with scarcely any vegetation, and all are devoid of drinking water and afford no means of subsistence It is necessary therefore to furnish all food, drinking water, and incidental supplies for the maintenance of the colonists by sending quarterly expeditions to the islands from Honolulu.

SOUTH-WEST AFRICA. There are in this territory (which has been administered since 1920 under a mandate by the Union of South Africa) 9,632 German-speaking settlers, of whom 6,244 are South African or British subjects.

The native people are pastoral: desert and climatic conditions do not favour agricultural development. Administrative activity is directed towards the resettlement of tribes within reserves, the reconstruction of tribal organizations, and the provision of water supplies. There are 53 government elementary schools and six higher schools for Europeans, besides some German private schools. Native education is in the hands of the missions, who receive grants from government.

In March 1938 Germany renewed her claim to the territory: the Union government holds that the legal status of the territory has been settled by the London Agreement of 1923. Assurances on this point were given to the Herero tribe later in the year. Meanwhile, Nazi propaganda and the political organization of the German settlers continues, and uncertainty as to the future is providing an obstacle to the normal expansion of business. The political activities of aliens are restricted: since April 1937 it is an offence for local British subjects to give allegiance to the Head of a Foreign State. (J. L. K.)

Area and Population:
Area 317,725 sq. miles.
Population (census 1936): Total 357,787 (native 261,724; coloured 65,372; European (est. June 30) 30,900.
Chief Towns (European pop. = E.) Windhoek (10,651; E. 4,812), Swakopmund (1,977; E. 1,149).
Administrator. Dr. the Hon. D. G. Conradie, B.A., LL.D.
Production 1937:

Diamonds	196,802 metric carats
Gold	£19,510
Tin concentrates (export)	£36,482
Vanadium concentrates (export)	£119,017
Sheep, number	2,815,030

External Trade 1937:

Imports	£2,420,753
Exports	£3,705,488

Communications and Transport March 31, 1937:
Roads, public, 20,000 miles; motor services, 871 route miles.
Railways, government 1,462 miles
Motor vehicles licensed (Dec. 31, 1937): cars, 3,232; lorries, 1,417; cycles, 132.
Finance:
Revenue (1936–37) £868,116
Expenditure (,,): ordinary, £804,102; capital, £187,806.
Education (June 2, 1937):
Government schools: primary, 53; scholars, 3,846.
,, : secondary, 6; ,, 1,296.

SOVEREIGNS, PRESIDENTS, AND RULERS. The following list includes the names of those holding the chief positions in their country on Jan 1, 1939.

Country	Name and Office	Accession, Election, or Appointment
AFGHANISTAN	Mohammed Zahir Khan, King	1933
ALBANIA	Zog I, King	1928
ARGENTINA	Dr. Roberto M Ortiz, President	1938
AUSTRALIA	George VI, King	1936
	Lord Gowrie of Ruthven, Governor-General	1936
	Joseph A. Lyons, Premier	1932
BELGIUM	Leopold III, King	1934
	Paul Spaak, Premier	1938
BHUTAN	Yigme Wang-chuk, Maharaja	1926
BOLIVIA	Col. German Busch, President	1938
BRAZIL	Dr. Getulio Vargas, President	1934
BULGARIA	Boris III, Tsar	1918
	George Kiosseivanov, Premier	1937
CANADA	George VI, King	1936
	Lord Tweedsmuir, Governor-General	1935
	W. Mackenzie King, Premier	1935
CHILE	Don Pedro Aguirre, President	1938
CHINA	Lin Sen, President	1931
COLOMBIA	Dr. Alfonso López, President	1934
COSTA RICA	Léon Cortés Castro, President	1936
CUBA	Dr. F. Laredo Bru, President	1936
CZECHOSLOVAKIA	Dr. Emil Hácha, President	1938
	Rudolf Beran, Premier	1938
DANZIG	Carl Burckhardt, High Commissioner	1937
DENMARK	Christian X, King	1912
DOMINICAN REP.	Dr. Don Jacinto B. Peynardo, President	1938
ECUADOR	Dr. Manuel M. Borrero, President	1938
EGYPT	Farouk I, King	1936
	Mohammed Mahmoud Pasha, Premier	1938
EIRE	Dr. Douglas Hyde, President	1938
	Eamon de Valera, Premier	1938
ESTONIA	Konstantin Päts, President	1933
FINLAND	Kyösti Kallio, President	1937
FRANCE	Albert Lebrun, President	1932
	Edouard Daladier, Premier	1938
GERMANY	Adolf Hitler, Fuhrer and Chancellor (1933)	1934
GREAT BRITAIN	George VI, King	1936
	Neville Chamberlain, Premier	1937
GREECE	George II, King	1935
	Gen. John Metaxas, Premier	1936
GUATEMALA	Gen. Jorge Ubico, President	1931
HAITI	Stenio Vincent, President	1930
HATAY, THE	Dr. Abdurrahman Malek, President	1938
HONDURAS	Gen. Tiburco Carias Andino, President	1933
HUNGARY	Admiral Miklós Horthy, Regent	1920
	Béla de Imrédy, Premier	1938
ICELAND	Christian X, King	1912
INDIA	George VI, Emperor	1936
	Marquess of Linlithgow, Viceroy	1936
IRAN	Reza Pahlevi, Shah	1925
IRAQ	Ghazi I, King	1933
	Gen. Nuri Es-Said, Premier	1938
ITALY	Victor Emmanuel III, King	1900
	Benito Mussolini, Premier	1922
JAPAN	Hirohito, Emperor	1926
	Prince Konoye, Premier	1937
LATVIA	Karlis Ulmanis, President	1936
LEBANON	Emile Eddeh, President	1936
LIBERIA	Edwin Barclay, President	1932
LIECHTENSTEIN	Franz Josef II, Prince	1938
LITHUANIA	Antanas Smetona, President	1926
LUXEMBURG	Charlotte, Grand Duchess	1919
MANCHUKUO	K'ang-té, Emperor	1934
MEXICO	Gen. Lázaro Cárdenas, President	1934
MONACO	Louis, Prince	1922
MOROCCO	Sidi Mohammed, Sultan	1927
NEPAL	Tribhubana Bir Bikram, Maharaja	1911
NETHERLANDS	Wilhelmina, Queen	1890
	Dr. H. Colijn, Premier	1933
NEW ZEALAND	George VI, King	1936
	Viscount Galway, Governor-General	1935
	Michael J. Savage, Premier	1935
NICARAGUA	Gen Anastasio Somoza, President	1937
NORWAY	Haakon VII, King	1905
OMAN	Sayyid Said bin Taimur, Sultan	1932
PANAMA	Dr. Juan D. Arosemena, President	1936
PARAGUAY	Dr. Felix Paiva, Provisional President	1937
PERU	Gen. Oscar R. Benavides, President	1935
PHILIPPINES	Manuel Quezon, President	1935
POLAND	Ignacy Mościcki, President	1926
	Felicjan Sławoj-Składkowski, Premier	1936
PORTUGAL	Gen. Antonio Carmona, President	1926
	Dr. Antonio Salazar, Premier	1932
RUMANIA	Carol II, King	1930
	The Patriarch Miron Cristea, Premier	1938
SALVADOR, EL.	Gen. Maximiliano H. Martínez, President	1935
SA'UDI ARABIA	Abdul-Aziz ibn Abdur-Rahman al Faisal al Sa'ud, King	1932
SIAM	Ananda Mahidol, King	1935
SOUTH AFRICA	George VI, King	1936
	Sir Patrick Duncan, Governor-General	1936
	Gen. James B. M. Hertzog, Premier	1924
SPAIN	Don Manuel Azaña, President of the Republic	1936
	Gen. Francisco Franco, Nationalist Leader	1936
SWEDEN	Gustav V, King	1907
SWITZERLAND	Philipp Etter, President	1938
SYRIA	Hashem el Atassi, President	1936
TUNIS	Sidi Ahmed, Bey	1929
TURKEY	Gen. Ismet Inonu, President	1938
UNITED STATES	Franklin D. Roosevelt, President	1933
URUGUAY	Gen. Don Alfredo Baldomir, President	1938
U.S.S.R.	Mikhail I. Kalinin, President of the Central Executive Committee	1937
	Vyacheslav M. Molotov, Chairman of the Council of People's Commissars	1931
	Joseph V. Stalin, General Secretary of the Communist Party of the U.S.S.R.	1922
VATICAN CITY	Pius XI, Pope	1922
VENEZUELA	Gen. Eleazar López Contreras, President	1935
YEMEN	Imam Yahya Muhammad Hamid ed Din, King	1904
YUGOSLAVIA	Peter II, King (Regency)	1934
	Milan Stoyadinović, Premier	1935

SPAAK, PAUL-HENRI (1899–), the first Socialist prime minister of Belgium is, through his mother, the socialist senator Mme Paul Spaak, a grandson of the great liberal-progressive leader, Paul Janson, and nephew of his predecessor, the liberal prime minister Paul-Emile Janson.

After the World War—during which he had been interned in Germany since 1916, having been captured while trying to cross the Dutch frontier to rejoin the Belgian army on the Yser—he studied law at the University of Brussels, and, after being called to the bar, displayed great activity on behalf of the socialist party, becoming in 1925 principal private secretary to the minister of labour, M. Joseph Wauters.

Elected deputy in 1932, M. Spaak took his seat at the extreme left of the party, at the same time editing the *Action*

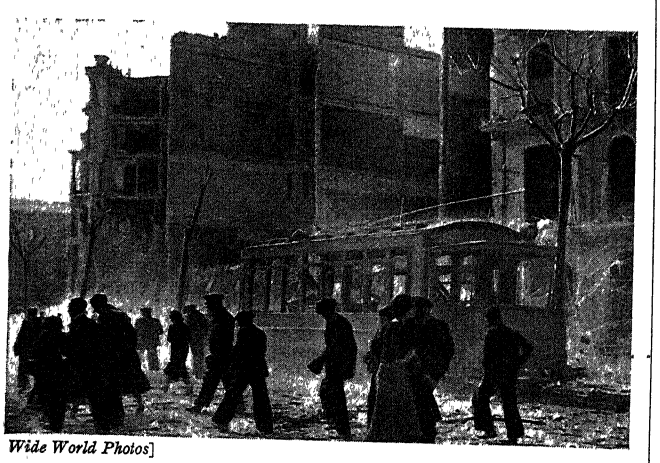
socialiste, a weekly in which he strongly opposed the "reformism" of the syndicalistic leaders of the Belgian labour party. In van Zeeland's first cabinet he was, from April 1935, minister of transport, posts, and telegraphs, and in his second cabinet (June 1936) minister of foreign affairs and foreign trade, in which office he pursued a policy of independence and non-alliance. On M van Zeeland's resignation in Oct. 1937, M. Spaak was one of those who tried, unsuccessfully, to form a cabinet, and on the formation of M. Janson's administration a month later returned to his former office, becoming prime minister as well when this government fell (*see* BELGIUM) in May 1938

During the last weeks of the year M Spaak's position became difficult owing to the Socialist opposition to his appointing an Agent to Nationalist Spain and withdrawing from the Non-Intervention Committee. Other causes led to his resignation on Feb. 9, 1939.

SPAIN. The loss and recovery of Teruel by the Nationalists in 1938, their creation of a Mediterranean corridor, and the slight foothold which they had gained in Catalonia made little difference to the relative positions of the two sides in the Civil War. Madrid remained unconquered, and, save for infrequent air-raids, unattacked. Barcelona was the seat of the governments of republican Spain and autonomous Catalonia, while the Basque autonomous government, driven from Bilbao in 1937, also had offices there. On April 17, when the Nationalist advance cut republican territory in two, General Miaja was appointed military and civil governor of republican Central Spain.

During the Ebro stalemate (July 26 to Nov 18) and the further period of inactivity in the field which followed it, interest in the Civil War was centred in the Nationalists' bombing of open towns and of foreign ships, and in the withdrawal from both sides of foreign combatants British missions have investigated air-raids and negotiated interchanges of prisoners.

Changes in the republican ministry have been few. Sr. Irujo, who had previously resigned the portfolio of Justice (which was taken by Don Mariano Anso) also resigned his ministry without portfolio on Aug 17, as did Sr. Aiguader of the Esquerra, as a protest against the nationalization by the government of the war industries, tribunals, and ports of Catalonia. Don Tomás Bilbao, a Basque, and Don José Moix, of the Esquerra, succeeded them. On April 5, after the fall of Lérida, Dr Negrín had reconstructed his government, increasing its numbers to twelve and admitting an Anarcho-Syndicalist for the first



Wide World Photos]
BARCELONA: AFTER THE NATIONALISTS' HEAVIEST, THREE DAYS' AIR RAID, MARCH 19, 1938



Wide World Photos]
GOYA'S STATUE AMONG THE RUINS OF HIS NATIVE TOWN, BELCHITE

time since the revolution of May 1937. This government also contained four Socialists, two Republican Lefts, one independent and one representative each from the Communists, Republican Union, Basque Nationalists, and Esquerra A notable return was that of Sr. Álvarez del Vayo to the Foreign Office.

At the end of April, Dr. Negrín enumerated thirteen points of principle for which the Republicans were prepared to "fight to the bitter end". These included a national plebiscite to determine the future structure of the State; the granting of "regional liberties"; freedom of conscience and worship; agrarian and industrial reform; and an amnesty for all Spaniards willing to co-operate in the reconstruction of Spain. The Thirteen Points were taken by many as providing a basis for negotiation, and Dr. Negrín declared in October that he was "willing at any time to negotiate for peace", though "dictated terms" would not be considered. General Franco, however, stated about the same time that there could be no ending to the war save the "unconditional surrender" of the enemy.

Several important trials took place: a spy trial in Madrid, where 110 of the 195 accused persons were sentenced to imprisonment and 23 to death; the trial in Barcelona, for complicity in the May 1937 rising, of nine Unified Marxist leaders (P.O.U.M.), five of whom were sentenced to long terms of imprisonment, though all were cleared of the charge of having fascist sympathies; and a series of trials, following the discovery of a spy ring in Catalonia, in which, by Mid-December, 200 persons had been sentenced to death and 200 to imprisonment.

The Cortes held only the two usual formal meetings of Feb. 1 and Oct. 1. A greater degree of unity between the component groups of the Popular Front seems to have been reached than at any time previously, especially since the Socialist-Syndicalist pact of April 18, signed after the invasion of Catalonia. The President of the Republic, Sr. Azaña, seldom emerged from his seclusion.

The morale of republican Spain, despite the frequency of air-raids, appeared to continue good, but food shortage, especially in Madrid, was a most pressing problem. General Franco's dropping of loaves as well as bombs in Madrid and Barcelona in October showed him to be alive to this fact. In January a decree ordered all persons in Madrid not engaged upon essential work to leave the city within thirty days upon pain of losing their food-rationing cards, but

there is no evidence that this decree was more successful than previous ones

Religious freedom was still denied to Catholics, though some small concessions were made, largely through the importunity of the Basques In one Barcelona church there were regular Sunday services Men in the forces were allowed spiritual aid. In various parts of republican Spain Masses were said frequently in private houses. The funeral of a Basque captain, held on Oct. 17 with full Catholic rites, was said to have been the first of its kind seen there since the war began. A decree reaffirming the principle of religious freedom was issued on Dec. 9, but did not appear to have become effective

In Nationalist Spain, both political and social developments continue. On Jan. 30, General Franco reconstructed his " Technical Council of State " as a government of eleven departments, he himself, its president, assuming supreme control of army, navy, and air force. Its outstanding members are the Conde de Jordana (Vice-President and Foreign Affairs), Don Pedro Sainz Rodríguez (Education and Fine Arts), Don Ramon Serrano Suñer (Interior, Press, Propaganda, Public Health), General Martínez Anido (Public Order and Postal Services), and Don Raimundo Fernández Cuesta (Agriculture) On Jan 6, the Institute of Spain, a body uniting the six learned Academies, was established at Salamanca ; Don Manuel de Falla is its President and Don Eugenio d'Ors its Secretary. On April 3, a decree re-established the Society of Jesus, ejected from Spain in 1932, and another, dated April 5, abolished the Catalan Statute of Autonomy General Martínez Anido subsequently prohibited the public use in Spain of any other language than Spanish, except that in certain Basque villages, where Spanish is little understood, the local authority may allow the use of Basque. Other decrees have fixed the prices of essential commodities ; authorized the infliction of fines or imprisonment on hoarders and profiteers ; created a National Press Service ; restricted the circulation of foreign books in Spain. In March was published a National-Syndicalist Charter of Labour ; various ministers have expounded the principles of National-Syndicalism as related to their own departments.

On Dec. 15, a decree was issued restoring to ex-King Alfonso the full civil rights which were taken from him by the Second Republic on Nov. 26, 1931.

The year's particularly heavy death-roll includes Don Armando Palacio Valdés (*q.v.*) (84), the veteran novelist ; Don Angel Pestaña (51), the syndicalist leader ; Don Juan de la Cierva (74), a monarchist ex-minister ; General Cabanellas (66), president of the Nationalist Junta at the beginning of the Civil War ; Don Serafín Álvarez Quintero (*q.v.*) (67), the elder of the two famous dramatist brothers ; Don Manuel Linares Rivas (71), another leading dramatist ; the Marqués de Alhucemas (76), the prime minister overthrown in 1923 by Primo de Rivera ; the Conde de Covadonga (31), formerly Príncipe de Asturias, eldest son of Alfonso XIII ; and Colonel Ramón Franco (42), brother of the Nationalist leader.

See George Orwell, *Homage to Catalonia* ; Robert Sencourt, *Spain's Ordeal* ; E. Allison Peers, *Spain, the Church and the Orders* ; also the Chronicle, documents and bibliography of Spanish Affairs in *Bulletin of Spanish Studies* (quarterly). (E. A. P.)

Area and Population :

Area 194,200 sq. miles (including Balearic and Canary Islands).

Population (est. Dec. 31, 1936) 25,050,000.

Chief Towns (pop 1934) Barcelona 1,148,000 ; Madrid, 1,048,100 , Valencia 353,000 ; Seville, 238,750.

President. Don Manuel Azaña (resigned Feb 28, 1939).

Language. Spanish

Religion. Christian (mainly Roman Catholic).

Production 1936 :

Wheat	3,306,500	metric tons
Barley	1,709,600	,, ,,
Rye	458,600	,, ,,
Oats	552,600	,, ,,
Maize (1935)	735,500	,, ,,
Rice (,,)	292,000	,, ,,
Potatoes (1935)	5,064,000	,, ,,
Beet Sugar	226,000	,, ,,
Wine (1937)	17,200,000	hectolitres
Olive Oil (1935)	439,800	metric tons
Cotton ginned (1936)	2,600	,, ,,
Wool	29,000	,, ,,
Coal (1935)	7,017,000	,, ,,
Iron Ore (1935)	1,240,000	,, ,,
Copper Ore	26,000	,, ,,
Lead	46,600	,, ,,
Quicksilver	1,226	,, ,,
Pyrites (1935)	2,286,000	,, ,,
Superphosphates of Lime	460,000	,, ,,
Potash (1935)	121,000	,, ,,

Overseas Trade, merchandise 1935 :

Imports	875,200,000	pesetas
Exports	583,400,000	,,

Communications 1936 :

Roads	*c* 60,000	miles
Railways	*c* 10,400	,,

Finance and Banking :

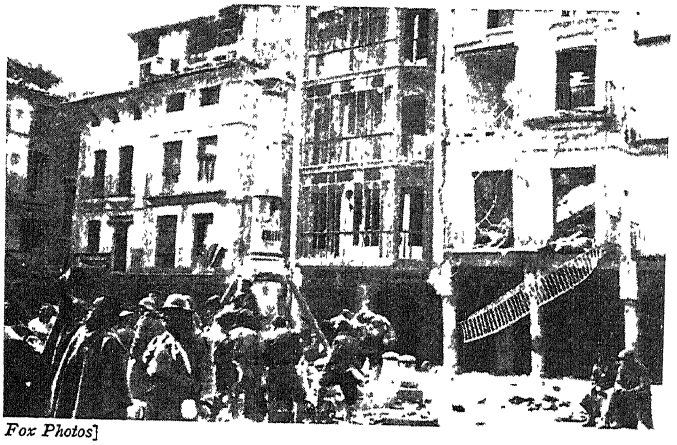
Revenue, excluding loans (1935)	4,139,000,000	pesetas
Expenditure (1935)	4,557,400,000	,,
Notes in circulation (Dec. 31, 1935)	4,837,000,000	,,
Gold Reserve (Dec. 31, 1935)	2,225,000,000	,,

Exchange Rate under Anglo-Spanish Agreement 101 pesetas = £1 stg : nominal 100–200 pesetas = £1 stg.

Education : nominally free and compulsory.

SPAIN, CIVIL WAR IN. The operations described under this head in the *Ency. Brit. Book of the Year*, 1938, conveyed, in the opinion of the writer of that article, three main lessons : the strength of the defensive in modern war ; the value of the counter-attack as a means of throwing an enemy off his balance ; and the high ratio of machine-power to man-power required by a successful offensive. In the light of subsequent events a fourth lesson must be added to the category, namely that if the machine-gun is the " queen of weapons " in the defence, blockade, in the general, non-technical sense of the term is, strategically—as surprise is tactically—the king of weapons in the attack. The end of 1937 found the Government responsible for the feeding and maintenance of rather more than half the total population of Spain, but in possession only of approximately two-fifths of her territory. While conditions of comparative plenty have ruled in Nationalist Spain, even if some rationing has been found necessary, a shortage of food, approaching in some instances to the verge of famine, has been the rule on the Government side. Further, while General Franco's forces have been endowed with a plentiful and almost continuous flow of war materials from Germany and Italy, the Government has had to rely on the help of Russia, a power without direct access to Spain and, in the circumstances of the present war, except when France has allowed war material to be sent across the Pyrenees, with no convenient channel of communication with her.

It is only against this political and economic background that the actual course of events becomes comprehensible. Without attempting to belittle the religious fervour of the Carlists or the Phalangists' enthusiasm for political regeneration, it remains broadly true that the history of the Spanish



Fox Photos]

NATIONALIST TROOPS SURVEY LINARES AFTER THEIR ENTRY, JUNE 7, 1938

Civil War represents a striking triumph of material over moral factors in war The defence of the Spanish Republican cause has not been conducted without a considerable measure of political disharmony between Communists, Anarchists, and moderate Republicans, nor has it been wholly free from outbreaks of criminal disorder, but it is probable that no offensives of modern times have been initiated with greater enthusiasm than the Government attack on Teruel in Dec. 1937, and the thrust across the right bank of the Ebro in July 1938; and that no defensive tasks have been faced with grimmer resolution than have those of holding Madrid and Barcelona. The two great offensives both petered out, and Barcelona has fallen, on January 26, 1939, in the event almost without a struggle. Madrid, at the moment of writing, still holds out, but its future—together with that of Valencia—is in the highest degree uncertain. The explanation lies in the combination of a shattering superiority in aircraft and artillery which correspondents, whose despatches have been censored by each side, have attributed to the Nationalists, with the physical and moral exhaustion induced by a long period of chronic and widespread under-nourishment on the side of the Republicans.

The period up to the beginning of 1938 was divided into two main phases: the advance on Madrid, halted at its very gates; and the Biscayan campaign, morally decided by the Nationalists' capture of Santander in Aug., 1937, and brought to a close by the fall of Gijon in the following October. The intervening period has witnessed the expulsion of the Republicans from Aragon, the pressure by the Nationalists under the famous General Queipo de Llano on the valuable mercury deposits of Almaden, and finally the fall of Barcelona, followed by that of the whole of Catalonia, and the consequent virtual destruction of the Army of Catalonia. The Republicans have lost, in Catalonia, the most important industrial area in Spain, their principal source both of armaments and munitions supply and of wealth; and the period here under review may well be characterized as the Catalonian phase of the war, for during it the main efforts of either side have been directed respectively to the defence and the seizure of the four provinces.

Almost simultaneously with the fall of Gijon, the Government's autumn offensive in Aragon was brought to a close, having made no impression on the Nationalist lines. A month later the relief of the Nationalists besieged in Oviedo settled the fate of the Asturias, but that their efforts had cost them dear was made clear by the Nationalists' subsequent abandonment of the initiative. After the fall of Gijon a comparative lull ensued, in which the most striking event was the transference of the seat of government from Valencia to Barcelona, a step which showed that the Republican chiefs viewed the defence of Catalonia as the crucial problem of the war

This lull was marked by preparations on both sides Above all, it witnessed the concluding phase of the training of the "New Model" army of the Spanish Republicans The stalemate on the Madrid front and the concentration of the main energies of the Nationalists on the Basque Provinces had enabled Don Indalecio Prieto, the Minister for Defence, to organize an army, whose framework was supplied by the militiamen recruited from the unions; it was based on divisions of nine battalions each. One of its chief difficulties was the absence of trained officers, but this disadvantage in comparison with the other side was diminished by casualties, their exertions of the summer and autumn having left the Nationalists with little leisure for the training of officers An attempt to diminish suspicions of the reliability of the professional officers on the Government side was made by the attachment to the several units of political commissars to supervise the political activities of officers and generally to maintain the *morale* of the troops. Apart from professional officers and foreign tutors, a certain number of Republican leaders had risen from the ranks "Campesino, a dour peasant, commands a division, so does Cypriano Mera, a syndicalist workman, and Lister, a quarryman. They continue to rank as majors while effectively exercising these high commands. All are popular heroes". It was the aim of the New Army to substitute Republican enthusiasts for foreigners or mere professional soldiers without sacrificing military efficiency.

In the months of November and December 1937, the Republicans made some progress to the south of Saragossa. The real test of the New Army came in the middle of December with the launch of the offensive on Teruel, a town in Aragon valuable to the Nationalists as a sallyport for an offensive towards the Mediterranean. The aim of the Republican Staff was to cut the Teruel–Saragossa road by a pincers movement, one force moving from the north-east, the other from the south-west.

It is impossible here to follow in detail the development of the Teruel campaign. Launched on Dec. 15, it achieved within a few days a substantial measure of success The fury and intensity of the attack upset the Nationalists' plans and made them use up reserves concentrated for an attack on Madrid, while the capture of high ground near the town of Teruel itself robbed the latter of its military value. By the end of December most of the town itself was occupied, and early in Jan., 1938, Colonel Rey, the Nationalist commandant, surrendered. Coupled with General Franco's boast a few days before that the "Teruel brooch clasps the chain of victories", its fall heartened the whole of Republican Spain and had a correspondingly adverse effect on the *morale* of the Nationalists.

This resounding success of the New Army was not long to remain undisputed. A few days later a Nationalist counter-attack was opened and enjoyed a partial success. It was resumed on a grand scale in the beginning of February, with the intention of obtaining control of the Sierra Palomera, a mountain area of about 115 sq. miles dominating the main road from Teruel to Saragossa. Assisted by aircraft and cavalry, General Davila carried out the whole operation in three days, capturing large numbers of men and quantities of materials. After the opening of the main road for the purpose of feeding the Nationalists, Teruel soon



Keystone]
FINAL PARADE OF THE INTERNATIONAL BRIGADE ON THE BANK OF THE EBRO BEFORE DISBANDMENT, OCT. 10, 1938

fell into their hands. Thus ended a campaign in which, after taking the initiative for the first time in the war, and after having seriously extended their adversaries, the Republicans were, not for the last time, defeated by a lack of staying power due to inferiority of material resources. The New Army was dealt a blow from which it never had an opportunity to recover.

After Teruel the Republicans redoubled their efforts, increasing, for instance, the hours of work in their factories. But the Nationalists also increased their pressure; taking the Republicans by surprise, they launched an offensive in Aragon. As their troops swept forward, bombers based on Majorca, and making use of a new technique of silent approach by gliding at great heights, subjected Barcelona to a three-days' reign of terror which evoked world-wide protests and aroused the "horror and disgust" of Mr. Chamberlain. Some 815 people were killed and 2,200 injured, and such was the havoc that "a week's hard work by day and night has not sufficed to clear the debris, which in some streets rose story high, completely blocking traffic".

And still, with minor setbacks, the Nationalist offensive against the exhausted and materially depleted Republican army went on. First Caspe fell; then a thrust at Huesca threatened the whole Republican front in Aragon. Lérida fell—after which Dr. Negrín, the prime minister, took upon himself the additional burden of the Ministry of Defence, replacing Don Indalecio Prieto. On April 7 it was announced that General Solchaga's Navarrese Corps had captured Tremp, with its electric power plant and reservoir, which resulted in the rationing of power in Barcelona. Finally on April 15 General Franco's men reached the sea near Tortosa, thus cutting off Catalonia from the rest of Republican Spain, over which General Miaja was set in supreme authority. Meanwhile the Catalan unions swore resistance "to the bitter end" and the arrival of air reinforcements improved the *morale* of Barcelona.

After the Nationalists reached the sea a relatively quiet period ensued on the major fronts, the principal Nationalist activity taking the form of a series of air raids on the Catalan and Levante coasts, some of which were found by a British commission to have legitimate military objectives and others to be without any military justification whatever.

Active operations in the field were resumed at the end of May with a Nationalist drive westwards towards Castellon and Sagunto, with Valencia as the ultimate objective. It encountered bitter resistance almost all the time. Castellon fell on June 15 Progress towards Sagunto, mainly very slow, continued both from the east and north.

At the end of July the first major operation on the southern front led to the expulsion of the Republicans from the valley of La Serena and the capture of two divisions. This paved the way for the capture of the Almaden mercury deposits later in the year.

On July 25 the Republicans by crossing the Ebro launched their second major attack in the war. Its object was to relieve the pressure on the Sagunto sector, and in this it was completely successful. Achieving a complete surprise, the Republican Right and Centre were virtually unchecked for three days, and after that progress continued to be made into August, Gandesa, the Republicans' formal objective, being seriously threatened. General Franco then ordered counter-attack after counter-attack upon the Republican positions, and in spite of enormous expenditure of life and material by him, the Republicans were not driven back across the Ebro until Nov. 16. Owing to the Ebro protecting the Republicans' flanks, the Nationalists were not able to follow their usual method of manœuvring them into a pocket and cutting them off. Once again it was shown that a considerable superiority in the air and an almost overwhelming superiority in artillery and ammunition would not bring victory against determined defenders in good positions and armed with machine-guns.

The Ebro campaign cost each side about 40,000 men—including some of the best, whom the Government, with their material inferiority, could ill spare. And on the "home front" all was not well. "Restriction and hardships", wrote *The Times* correspondent at the end of October, "are the order of the day in Barcelona. . . . Water, owing to deficient pumping, does not always reach the higher flats. There is a dearth of fresh vegetables and fruits. . . . Tobacco is unobtainable. Eggs fetch 8 pesetas (nominally about 6*s*) each."

General Franco launched his attack on Catalonia on Dec. 23. After a short but intense bombardment, he immediately achieved a spectacular success in his southern sector, meeting more resistance in the north. In spite of a system of defences presenting grave difficulties, the attack was conducted with scarcely a check. As throughout the war, the Nationalists displayed superior skill in manœuvring, but the character of their advance, with stronghold after stronghold falling in rapid succession and prisoners surrendering in large numbers, can only be explained by the Republicans' complete exhaustion in the face of overwhelming odds.

General Franco staked all his reserves on the one throw, thus departing from his usual caution; and the customary Republican strategy of aiming at a diversion by offensives elsewhere—on the Madrid and Estramadura fronts—was quite ineffective. It only remains to add that while Dr. Negrín had voluntarily disbanded the International Brigades which saved Madrid, the Italian Legionary Corps, in spite of the "token" withdraw of 10,000 Italians, played a prominent part in the final operations in Catalonia.

See also NON-INTERVENTION COMMITTEE. (W. T. WE.)

SPANISH COLONIAL EMPIRE. Total area (approx.), 322,300 sq. miles; total population (est. Dec. 31, 1936), 26,055,000.

The following table lists the colonies, protectorates, etc., of Spain, together with essential statistics appropriate to each of them, including the mother country itself:

Country	Area sq miles (approx)	Population est Dec 31, 1936 (000's omitted)	Capital	Status (1938)	Governors and Premiers (1938)
Spain, including Canary Is and Balearic Is	194,200	25,050	Madrid	republic	*President* Don Manuel Azaña *Premier* Dr Juan Negrin
AFRICA					
Ceuta and Melilla	77	115	—	administered as part of Spain	All areas in Africa were occupied by the Nationalists and consequently had no official governors.
Morocco (S)	8,080	750	Tetuan	protectorate	
Spanish Guinea, including Fernando Po, Rio Muni, and four small islands	10,380	120	Santa Isabel	colony	
Western Sahara, including Ifni, Rio de Oro, and Spanish Sahara	109,600	20	Villa Cisneros	colonies	

SPANISH LITERATURE. Little was produced during 1938 in Spanish but ephemeral literature, either wholly inspired by the Civil War or largely coloured by it Pro-Republican is A. Ruiz Vilaplana's *Doy fe* (translated as *Burgos Justice*); pro-Nationalist, J. Pemartín's *¿ Que es "lo nuevo" ?* and L. Carreras' *Grandeza Cristiana de España*, neutral, A. Mendizábal's *Aux Origines d'une tragédie*, published in Paris. Creative literature is represented by A. Sánchez Barbudo *Entre dos fuegos* (a first book), and A Serrano Plaja: *El Hombre y el trabajo* The outstanding critical work of the year is A Valbuena Prat's two-volume *Historia de la literatura española*. Reviews, notably *Hora de España* (chief contributors Antonio Machado, Antonio Porras, Concha Méndez, and Juan G del Valle), still appear in Barcelona, and the Casa de la Cultura has published a third number of the periodical *Madrid*.

Catalonia has been active. The Institució de les Letras Catalanes has revived the 180-page monthly *Revista de Catalunya*, and published, among many other works, P. Bohigas' *Cançoner Popular de Catalunya*, F. Soldevila's English reminiscences (*Hores Angleses*), verses by Marià Manent, essays by J. Serra Hunter, and volumes of translations from Marlowe, Sterne, Coleridge, Novalis, and Pater J. Bofill i Ferró edits an anthology of Carles Riba's verse. The Generalitat has issued three more volumes of the Fundació Bernat Metge Classics, and the Barcino series is richer by three volumes of Capmany. (E. A. P.)

SPANISH MOROCCO. Morocco continues to supply General Franco with troops. On March 13 he addressed the Moroccan Army Corps at Belchite, describing them as "the flowers of the Army and the worthy successors of Columbus and the Great Captain". *The Times* correspondent at Casablanca estimated (June 25) that Spanish Morocco had supplied 75,000 soldiers, and could now send only young recruits; others believe that there are large reserves ready to take the place of any more Italians that may be withdrawn. Several detachments certainly crossed the straits early in September and others in mid-November. Ceuta has several times been bombed by Republican airmen, notably on Jan. 23 and 25 and Aug. 28. The second January raid took place just as 500 Moorish troops had embarked for Algeciras: 165 casualties and much damage were reported; in August several Nationalist warships were bombed in the harbour. (E. A. P.)

Area and Population:
Area 8,080 sq. miles.
Population (est. Dec. 31, 1936) *c.* 750,000.
Chief Town (cap.) Tetuan (pop. *c.* 50,000).



Elsme Bickerstaffe]
TETUAN, SPANISH MOROCCO: THE NATIVE CITY WITH SHOPS SHUT UP DURING THE MIDDAY SIESTA

Language. Arabic.
Religion. Mohammedan.
Production:
Iron Ore, metal content (1936) . 579,000 metric tons
Antimony Ore, metal content (1934) 314 ,, ,,
Communications:
Roads . . . . . *c.* 500 miles
Railways . . . . . 80 ,,

SPANISH WEST AFRICA. The Spanish possessions in West Africa consist of the colony of Western Sahara, which includes Ifni, Rio de Oro, and Spanish Sahara, and the colony of Spanish Guinea, which includes the mainland area of Rio Muni, the islands of Fernando Po and Annobon, and the Corisco Islands. All these areas have been occupied by the Spanish Nationalist forces and in consequence had no official governors during 1938.

Spanish Guinea.
Area and Population:
Area *c.* 10,380 sq. miles (Fernando Po 781 sq. miles).

Population (est. Dec 31, 1936) *c* 120,000 (Fernando Po 20,870)
Chief Town (cap.) Santa Isabel (in Fernando Po).
Language (official). Spanish.
Production. The chief products are cocoa (14,900 metric tons in 1935), coffee, and sugar cane.

Western Sahara.
Area and Population :
Area *c.* 109,600 sq. miles.
Population (est. Dec 31, 1936) *c* 20,000.
Chief Town (cap.) Villa Cisneros (in Rio de Oro).
Language (official) Spanish.
Religion. Mainly Mohammedan

SPECIAL AREAS. Parliament decided, on Nov 28, 1938, to continue the acts offering inducements to new industries to establish themselves in the special areas of Great Britain and giving authority to Special Areas Commissioners, the most powerful weapon in whose hands is the authority to grant special relief in rates to firms setting up factories within the areas. To the end of the year, the Commissioners had authorized the expenditure of more than £24 millions, excluding any capital brought by new firms which had established themselves on trading estates and elsewhere within the areas. Of this total the principal items were: £6,316,000 in grants towards the cost of schemes urgently necessary in the interests of public health, £5,910,000 to assist new industries, £3,276,000 for land settlement schemes, and £2,352,000 in other grants. In spite of this expenditure, the Opposition complained in the parliamentary debate on the extension of the Special Areas (Amendment) Act, 1937, that the hard core of unemployment was still untouched in the special areas, and asked for the appointment of a special Minister of Employment. The average percentage of unemployment throughout South Wales and Durham in Dec. 1938 was still nearly 25, and in some districts in South Wales as high as 44. It is also significant that certain districts—among them Cornwall and Liverpool—not classed as special areas have urged the Government to schedule them as such, and this local desire suggests very strongly that the powers granted to the Commissioners are regarded with envy by areas not covered by the Act.

It is recognized by the Government that the problem is a national and not a local one. The areas in which the disproportion in Britain's industrial balance is most acute are not obtaining their proper share of the new types of industry being established in the country, and the problem is still largely that of the acceleration and stimulation of the introduction of new industries into these "black spots". Many local authorities in the special areas await with great interest, and some misgiving, the recommendations of the Commission on the Geographical Distribution of Industry which is expected in the spring of 1939; they feel that the Commission should urge the acquisition by the Government of compulsory powers to force certain types of manufacturers to establish their new plants in their districts. Sir Malcolm Stewart, formerly Chief Commissioner of Special Areas, in his annual report for 1938, however, described this proposal as unnecessary and dangerous; much more promising as an exploration into possible developments is the investigation into land settlement commenced by a departmental committee established by the Minister of Labour towards the end of 1938. One of its main inquiries will be concerned with the comparative failure of most special areas land settlement schemes to absorb into agricultural vocations men not likely to return to industry, and it is probable that experiments will be made with a new type of land settlement involving the farming of an area by the State, which itself will pay agreed weekly wages to settlers instead of encouraging, as at present, settlers to establish themselves as landowners on their own account.

There is no doubt that work on the national defence programme has contributed to the decrease of unemployment in special areas, but the total unemployed was so great originally that it is recognized that a substantial percentage absorption through armament work is almost impossible. In Nov. 1938 there were still 250,000 unemployed in the special areas. (V. B.)

SPEEDWAY RACING. In spite of a big drop in attendances due to the crisis in early autumn, Speedway Racing had a record season in 1938. Crowds at the first and second division tracks totalled nearly 4,500,000, and 76,000 saw Arthur Wilkinson, of Bathurst, New South Wales, win the Speedway Championship of the World at Wembley. The runner-up was the 1937 champion Jack Milne, of U.S.A., and the third Wilbur Lamoreaux, also of U.S.A.

Wilkinson, who earned over £3,000 during the seven months' season in England, also won the Scottish Championship at Edinburgh, and was top point scorer for his club, West Ham, in league and cup matches. The England *v.* Australia test matches were revived with great success, England winning three matches to Australia's two. An international series, England and Australia *v.* U.S.A. and Canada, was abandoned, with the American team leading by two victories to one, because of lack of interest on the part of the riders and the public. This was the only competition that failed to attract.

Though victorious in the test matches, English riders individually again had a bad year. The West Ham rider Tommy Croombs, who was successful in the North of England Championship at Manchester, was the sole exception. George Newton, of New Cross, was holding the American, Canadian, and Australian stars when he sustained concussion and a fractured wrist in a mid-season accident. He resumed after five weeks, but lacked his previous confidence. Several promising riders came to light in the second league, Hackney Wick refusing a £500 offer from Wimbledon for Douglas Wells.

Wimbledon, who hardly won a match in 1937, brought off the big double by carrying off the National Trophy and "Evening News" London Cup. New Cross secured the Division I title from West Ham, the 1937 winners. The final placings were: New Cross 1, West Ham 2, Wembley 3, Wimbledon 4, Belle Vue (Manchester) 5, Harringay 6, Bristol 7.

Hackney Wick became Division II champions, beating Norwich, who finished level on match points, on race points average, but did not accept promotion. The final positions were: Hackney Wick 1, Norwich 2, Southampton 3, West Ham Reserves 4, Lea Bridge 5, Newcastle 6, Sheffield 7, Birmingham 8, Leeds 9. (J. Se.)

SPICES. The pepper market declined steadily throughout 1938. The United Kingdom market is still suffering from the effects of the 1934 speculation, and prices were lower than ever before. Exports from the Netherlands East Indies increased in 1938 by about half compared with 1937, owing to larger shipments of black pepper to the United States. The United Kingdom and Germany considerably reduced their pepper imports in 1938.

Ginger crops in India and Africa were reported about normal, but prices declined to very low levels.

Settlement of the Zanzibar clove marketing dispute was

reached in May 1938, but the trade in 1937 was dislocated by the merchants' boycott and exports fell sharply. The Zanzibar and Pemba crop harvested in 1937–38 was exceedingly heavy and the 1938–39 crop small. Prices, though lower than in 1937, were steady during 1938.

Cinnamon prices fluctuated during 1938, exports from Ceylon being somewhat below those of 1937. Difficulties in securing supplies of Chinese cassia lignea have attracted some interest to the lower grades of Ceylon cinnamon. China's exports of cassia lignea were about halved in 1938 as compared with the large shipments of 1937.

The market for nutmegs was fairly steady during the year, but exports from the Netherlands East Indies declined. (J. L. C.)

SPIRITS. The United States continues to dominate the world market for potable spirits. In the first six months of 1938, some 40·97 million gallons of whisky were put into consumption in America, together with 576,000 gallons of rum, 6,255,000 gallons of gin, and 912,145 gallons of brandy. The great bulk of these supplies were distilled at home, for America is at once the world's chief buyer and producer Although whisky distilling originated in Scotland and Ireland (in which country it is usually spelt "whiskey"), whiskies are to-day extensively produced in Australia, Canada, and the United States. Scotch whisky, with its distinctive character and flavour, enjoys the greatest measure of popularity throughout the world as well as in its home market. For several years past the overseas demand for Irish whiskey has been limited. Since the repeal of prohibition in the United States, large quantities of Canadian whisky have been imported to rectify America's deficiency in matured supplies. There is also a European demand for Canadian and the American rye and bourbon whiskies, but it is mainly to meet the requirements of American tourists. Australian whisky is not met with outside the Antipodes. Noted gin-producing nations are Holland, Britain, the United States, Canada, and Australia, but only the first two countries enjoy a substantial export trade. Holland, of course, was the pioneer gin producer, and the Dutch gin (or Geneva) is world-renowned. Nevertheless, it is the English gins, notably the London dry gins, which are copied so extensively by the gin distillers and rectifiers of North America and Australia.

The character and quality of gin is not so obviously influenced by the locality where it is produced as is that of whisky, for instance, and several gins distilled in Canada, the United States, and Australia are made to the recipes of leading London gin houses. Nevertheless, it is claimed by independent experts that gins produced abroad, even by the same firm and to the same recipe, do not quite approach the standard of the London-distilled article In addition to these spirits produced from barley and other cereals, the world demand has been well maintained for rum, produced in all sugar-cane growing areas and reaching the highest standard of perfection in Jamaica. Moreover, although the chief spirit-consuming countries produce their most popular spirits from cereals, the world market for brandy keeps up very well. (D. F. C.)

Production and Consumption of Spirits in the United Kingdom.

(*Nine Months Ended Sept.* 1938)

	1936 Pf. Gals	1937 Pf. Gals.	1938 Pf. Gals.
Spirits distilled in the United Kingdom	47,200,876	59,649,363	61,515,688
British spirits consumed in the United Kingdom	5,891,957	6,122,758	5,987,622

EXPORTS OF BRITISH SPIRITS

(*Nine Months Ended Sept.* 1938.)

	1936	1937	1938
Totals in proof gallons	6,715,399	7,677,883	7,301,286

SQUASH RACKETS. The year 1938 was marked by the retirement of the unapproachable Amr Bey, who had been amateur and open champion for many years, by the return of Gandar Dower after an absence of two years, and by a series of experimental matches at the Association's headquarters in Dolphin Square, Westminster, in which the new and rather faster ball and the lower play-line, or "tin", reduced from 19 to 17 inches, were tried out with satisfactory results, particularly in the shortening of the rallies.

Of the principal events · Amr Bey again retained the open championship by defeating J. Dear, Prince's Club professional, who himself retained the professional championship, winning from J. Biddle of the Junior Carlton , in the amateur championship Amr Bey won from Dr. Stokes ; and Cambridge beat Oxford by three matches to two The women's open went to Miss M. E. Lumb for the fourth successive time ; Mrs. R. L. Teague had the distinction of winning the East, the West, and the North of England championships ; and the Oxford women beat those of Cambridge. Middlesex, in defeating Yorkshire, won the County championship for the first time ; W. B. Scott retained the Scottish title, and England beat Scotland in the first of what is hoped will be a series of internationals.

Twenty-four "Old Boys'" clubs entered for the Londonderry Cup, which was inaugurated in 1933 and has been held only by the Old Etonians and the Old Wykehamists ; these were again the finalists, and the latter were the winners. The Bath Club Cup was retained by the Conservative Club, who defeated The Rest by four matches to one.

In January an English team for the first time toured Belgium and Holland, and in March a Cambridge University team visited the U.S.A. ; they were defeated six times running by Harvard, lost to Yale, 5–1, and beat the University of Philadelphia, 4–1.

The United States championships for 1938 were held in Baltimore, in February. Germain G. Glidden won the title. The national team title was won by Boston, comprising Arthur H. Barker, Richard V. Wakeman, Lindsay Ware, Harold F. Kaese, and William Holden. The national doubles champions are Hunter Lott, Jr., and William E. Slack. The veterans' national title was won by A. M. Sonnabend, of Boston. In the women's division Miss Cecile Bowes won the national title ; Mrs. John Bierwirth and Mrs. William Adams the national doubles title.

The 1937–38 Canadian championship, held in Quebec, was won by Hubert Martin of Hamilton, Ont., the 1935 champion. The Latham Cup team match between Canada and the U.S.A. was won by the latter in Boston, Mass., by 13 matches to 2.

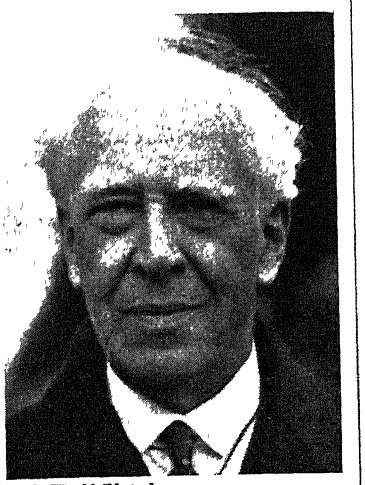
STALIN, JOSEPH VISSARIONOVICH (1879–), Russian statesman and general secretary of the Communist party of the U.S.S.R., was born in Georgia and succeeded Lenin as virtual dictator of the Soviet Union in 1924 (see *Ency. Brit. Book of the Year*, 1938, p. 606). During 1938 he continued his policy of eliminating all "Trotskyist" and anti-Stalinist influences to the extreme of ruthlessness (for an account of which *see* U.S.S.R.), and in February

restated his aims of building socialism in his own country in spite of the fact that there was no visible sign of the approaching adoption of that system in other countries, and said that the problem of the defence of the Union from foreign aggression could be solved only " by joining the serious efforts of the international proletariat with the still more serious efforts of the whole Soviet people", at the same time insisting on complete and perpetual national preparedness

In October it was reported that Stalin, who, earlier in the year, had been accused by Mussolini of being a " secret Fascist ", was to relinquish his nominal functions as Communist party secretary and take a title more in accordance with his headship of the State ; the suggested title was " the Great Red Vozhd", *vozhd* being a somewhat heightened version of *Fuhrer* In December he, with Molotov, Voroshilov, and other leaders, acted as guard of honour at the lying-in-state of the body of Chkalov, the famous airman who was killed in a crash.

STAMP COLLECTING : *see* PHILATELY.

STANISLAVSKY, CONSTANTIN, Russian theatrical producer and actor, whose real name was Constantin Sergeevich Alexeev, was born in Moscow in 1863, and died on Aug. 7, 1938. A biographical notice of him may be found in the *Ency Brit.*, vol. 21, p. 313. Stanislavsky lived entirely for the Moscow Art Theatre, and meddled not at all in politics ; and for this reason the effect of the Bolshevik revolution upon his work, though necessarily tremendous, was not destructive, and he was allowed to retain a measure of control over the Theatre. From 1922 to 1924 he toured Europe with his company. The Soviet Government awarded him the Order of the Red Banner in 1933.



Wide World Photos]
CONSTANTIN STANISLAVSKY

STANLEY, The Right Hon. EDWARD MONTAGU CAVENDISH, LORD STANLEY, British politician, was born on July 9, 1894, and died in London on Oct. 16, 1938. Lord Stanley was the elder son, and heir, of the seventeenth Earl of Derby. He was educated at Eton and Magdalen College, Oxford ; and in the World War, after receiving a commission in the Grenadier Guards, he served as A.D.C. to the G.O.C., 2nd Army Corps, adjutant of the Household Battalion, and brigade major. He was awarded the M.C. and the Croce di Guerra. He was M.P. for the Abercromby Division of Liverpool, 1917–18, and for the Fylde Division of Lancashire from 1922 till his death. The chief posts held by him were : Junior Lord of the Treasury, 1924–27 ; deputy chairman of the Conservative party, 1927–29 ; parliamentary under-secretary, Dominions Office, 1935 ; parliamentary and financial secretary to the Admiralty, 1931–35 and 1935–37 ; parliamentary under-secretary, India Office, 1937–38 ; and Secretary of State for the Dominions since May 1938. He was sworn a member of the Privy Council in 1934. Race-goers will remember the race for the Gold Cup at Ascot in 1936, when Quashed, carrying Lord Stanley's colours, beat the American horse, Omaha.

STANLEY, SIR GEORGE (FREDERICK), British soldier and politician, was born on Oct. 14, 1872, and died in London on July 1, 1938. He was the sixth son of the sixteenth Earl of Derby, and a brother of the present Earl. He was educated at Wellington and Woolwich, served in the South African War in the R H A. and in the World War in the R.F A , attaining the rank of Lieutenant-Colonel He was member of parliament for Preston, 1910–22, and Willesden East, 1924–29, and was parliamentary under-secretary to the Home Office, 1922–23, and parliamentary secretary to the Ministry of Pensions, 1924–29. From 1929 to 1934 he was Governor of Madras, acting as Viceroy from May to Aug 1934, during Lord Willingdon's absence. He was sworn a member of the Privy Council in 1927 ; and his honours included the C.M.G. (1916), G C.I E. (1929), and G C.S.I. (1934).

STEEL : *see* IRON AND STEEL

STOCK EXCHANGES. The forces of economic recession and political uncertainty combined to produce another unfavourable year on the London Stock Exchange. Over the year as a whole, 2½ per cent Consols fell from 74⅝ to 70½, having been as high as 79¼, and as low as 64. Conversely, the yield-basis on 3½ per cent War Loan (also a " long-dated " stock) rose from £3 8*s.* 3*d.* per cent to £3 12*s.* per cent. Industrial ordinary shares fell by 16·1 per cent, according to the *Financial News* ordinary share index, from 95·9 to 80·4 (July 1, 1935 = 100), while the Actuaries Index showed a fall of just under 17 per cent, from 73·8 to 61·5 (Dec. 31, 1928 = 100). Throughout the year, the volume of security trading was at an abnormally low level.

During the second half of the year the gilt-edged market was subjected to a severe political test, and threatened to become demoralized. In the days immediately prior to the Munich Agreement, however, the gilt-edged dealers introduced a system of minimum prices below which they were not prepared to deal, and their action undoubtedly assisted the market to find stability in a critical time. Old Consols were quoted at 66 and War Loan at 93 minimum. After the Munich settlement, the former rose immediately to 74½ and the latter to 101½. Towards the end of the year, the renewal of political uncertainty, coupled with apprehensions regarding the cost of rearmament, caused further weakness. This was not allayed by the statement of the Chancellor of the Exchequer at the end of November that some increase in defence borrowing powers beyond the present limit of £400 millions (of which approximately £180 millions has already been earmarked) would be sought in 1939.

Fears for the earnings position of the main-line railways caused heavy losses in all classes of the stocks, not excluding debenture and guaranteed issues, whose service has hitherto been regarded as assured. The railways' campaign for a " Square Deal ", including de-restriction of the rate-making machinery, gave the market some impetus in December, but the stocks closed on an anxious note, which was justified by a total traffic loss for the four main lines of £7,056,000 for the year.

Although industrial profits showed a rise of 6·4 per cent during 1938, the general trend of industrial stocks was adverse, and the market was averse to discounting any sizable economic recovery, despite the improvement in the United States. In particular, rearmament shares engineering and aircraft issues provided occasional interest, but their movements were not consistent. Despite the continuous rise in the price of gold to record levels, gold-mining shares failed to advance, owing primarily to fears of the reper-

cussions of Germany's colonial claims. Commodity shares (with the possible exception of copper issues in the autumn) remained depressed, for the recovery in prices was sluggish and demanded strict control of production

In recent years direct dealings with the large financial institutions have diverted much business from the floor of the Stock Exchange. Brokers may not deal "outside" unless it is more advantageous for their clients. Hence the Stock Exchange Committee proposed last July to give more specific effect to the existing rule by insisting that the broker should "test the market" before entering into any "outside" transaction. After long controversy, the Committee decided in December to substitute a revised rule, calling for a special marking slip to give detailed control over such bargains. (R. E. Bi)

United States. During 1938 the New York Stock Exchange, either of its own volition or because of rulings of the Securities and Exchange Commission, effected many important changes in its rules The most significant of these may be grouped under the following four main headings·

Short Selling Requirements. On Jan 24 the Securities and Exchange Commission ruled that as from Feb. 8 no person could make a short sale, other than in odd-lot transactions, "at or below the price at which the last sale thereof, regular way, was effected". The previous rule, effective since 1931, provided that "short sales could be made *below* the last sale" On May 25 the above-mentioned change was enlarged by a ruling of the board of governors to the effect that "a short sale on an odd-lot must be based upon a round-lot sale at a higher price than the last round-lot sale".

Exchange Reorganization Requirements. Changes in this respect comprise the following: (1) Reorganization of the New York Stock Exchange with a paid president, a chairman of the board chosen from the members, a governing committee on which partners of member firms, out-of-town houses, and the public would receive increased representation, and the giving of increased authority to the paid personnel of the Exchange; (2) a revision of the Exchange's arbitration machinery whereby, in cases involving non-members, arbitrators will be drawn by lot, one from the members of the arbitration committee, one from a panel of persons engaged in the securities business, and a third from a panel of persons not engaged in the securities business; and (3) amendments to the constitution, requiring all non-member general partners in member firms to become allied members of the Exchange, directly subject to Exchange control and discipline.

Financial Statements of Member Firms. Early in March the governing committee of the New York Stock Exchange approved a rule, on the recommendation of the committee on business conduct, requiring "member firms to make available to any customer, upon request, a statement of financial condition" on the basis of the firm's most recent answer to a Stock Exchange questionnaire Subsequently a form of condensed financial statement was sent to all registered firms, which they were authorized to give or send to their customers. But it was expressly pointed out that the giving of such a condensed statement did not relieve the firm from the obligation to make available, on request of any customer, the full financial information furnished in its most recent answer to a Stock Exchange questionnaire.

Alterations or Suggested Alterations in Exchange Practices. Four such changes deserve special mention On Sept. 1 the Exchange had introduced semi-weekly settlements, as an experiment, but as a result of a questionnaire sent to all members the board of governors decided to return to the "second-day system" With respect to the listing of securities, the Exchange has made a recommendation to the SEC "for enactment of Federal legislation requiring unlisted or 'over-the-counter' issuers to register and furnish the SEC information comparable to that now required of listed and registered companies". At the close of the year the New York Stock Exchange tightened its rules as they relate to the handling of "proxies" for votes in company meetings. Hereafter brokers are obliged to "consult their customers' wishes before acting on requests for authority to exercise shareholders' voting privileges at corporate meetings". Mention should also be made of the "Fifteen-point Programme" announced by the Exchange on Oct. 31. The summarized programme, as reported by the Exchange, emphasizes the following.

1 Tentative plans for a Central Depository.

2 Proposed separation of capital employed by member firms as underwriters or dealers.

3. Reduction of debt ratio of member firms from 20 to 1 to 15 to 1, effective Jan. 1, 1939

4 Prohibition of loans, unless fully secured, by members to, or from, any governor, committee member, officer, or employee of the Exchange

5 Disqualification of any governor or member in the investigation or consideration of any matter relating to a creditor member or firm

6. Answers by all member firms to "long form" questionnaire at least once a year, and to "short form" questionnaire quarterly

7. Independent audits at least once a year of the books of all firms doing a public business.

8 Increased scope and frequency of supervisory audits of member firms made by the Exchange.

9. Reports to the Exchange from members, firms, and partners of all unsecured loans of more than $2,500 obtained from or made to any other member, firm, or partner

10. Prohibition of member firms carrying margin accounts, effective April 1, 1939, for general partners of any member firm dealing directly with the public.

11. Prohibition of member firms carrying an account for a general partner of another member firm without prior written consent of another partner of such other firm.

12 No member doing business as an individual permitted to carry securities accounts for customers

13. More intensive supervision by Committee on Member Firms of member firm employees.

14. Stricter and more rigid supervision of member firms' business practices.

15. Weekly reports to the Exchange from member firms on their underwritings and net resulting positions. (S S. H.)

STOCKS AND SHARES. Various influences combined to make 1938 a disappointing year for the London Stock Exchange. First there was the trade recession, which began in the early spring of 1937, and was only checked, but not reversed, in May 1938; and since May there has been no recovery, but on the contrary signs of a fresh deterioration in November and December. Next there were the political disturbances, including the *Anschluss* between Germany and Austria in March; the tension over Czechoslovakia in May; the crisis of September, which brought the world to the brink of war; and the doubts of the late autumn occasioned by the fresh German attacks on the Jews and the Italian agitation against France. Moreover, the wars in Spain and China continued unabated during the year. One consequence of these influences was a general reluctance to buy securities. Another consequence, which became operative from May onwards, was a steady and growing outflow of foreign funds from London, and this led to a sustained foreign realization of British securities. Add to all this the inroads of high taxation upon British

savings and the issue of a fresh Defence Loan, and it will be apparent that 1938 represented for British securities a falling market. Apart from foreign realizations there was no serious pressure to sell, but there was a complete absence of buying.

The following table shows the *Financial Times* security price index numbers on certain " Key " dates .

Security Index-numbers (1926 = 100)

Date	British Govt. Securities	Home Rails	Industrials	Gold Mines	Base Metals	Oil	Rubber
1938							
Jan 7	113·9	65·8	119·3	208·7	68·7	206·9	142·1
March 16 *	110·9	57·4	97 8	190·2	58·2	162 9	105 7
April 29 †	113 2	60 9	110 5	201·5	59·4	166 6	114 0
May 23 ‡	112 8	55·3	104·0	194 5	52·5	162 2	106·3
July 29	113·2	52 6	106 6	209 2	63 9	199·1	128·7
Sept. 26 §	102·3	40·2	92·5	191·3	56·3	175 3	108·7
Oct. 6 ‖	111 1	44·0	103·3	216·1	63·2	196 5	120·4
Dec. 30	108 2	41·6	98·6	211·4	61·3	193 4	101·8

* Austrian *Anschluss* † Date prior to first French repatriation. ‡ Czechoslovakian tension. § Worst point of crisis ; but industrials touched 91 2 on Sept 28 ‖ Rebound after Munich.

The influence of the various international crises is very apparent. At the height of the September crisis, the prices of British government securities fell so low that minimum prices had to be fixed, below which the Stock Exchange agreed not to deal. These only remained in force for a few days, for the recovery on the Munich Agreement removed their necessity. The table also shows that the year was one of general decline, with the single exception of gold-mining shares, which, in spite of French realizations, were assisted by the year's rise of about 10*s*. per oz. in the sterling price of gold. (N. E. C.)

United States. Following the drastic decline of 1937, there was a substantial maintenance of the price level from November to the end of that year. But the first half of 1938 again witnessed a further decline in the price level for all railroad, industrial, public utility, and copper and brass stocks. The record for the last half of 1938 was a more cheerful one, although the market rise from a percentage standpoint, following May and June, by no means represents a substantial recovery of the huge decline in dollar values occasioned by the preceding year's bear movement. Railroad stocks improved from 22·7 for June to 31·7 for November (the latest monthly average available) ; industrial stocks from 97·5 for May to 129 1 for November ; public utilities from 51·6 for April to 66·4 for November ; and copper and brass shares from 108·5 (April) to 165·8 (November) During all of the last half of 1938 the market may be described as remarkably steady, with only two slight dips in the rising tendency, namely in September and December.

The increasing burden of taxation, the unbalanced budget, and war or the prospects of war probably served during 1938 as a check to moderate the market improvement which might otherwise have been reasonably expected in the light of the extraordinary cheapness and abundance of funds available for investment and speculative purposes. On the other hand, certain favourable factors became more and more evident during the latter half of 1938. Among these the following should be emphasized : improvement in the building and iron and steel trades, an increase in the volume of fundamental business averages of about 10 per cent above the December levels of 1937, an exceptional reduction in labour upheavals, and a distinct tendency in business towards climbing profits. These factors have certainly served to create a more cheerful attitude in the States with respect to the future, despite the enormous amount of " war talk ". Moreover, there seems to have been a very distinct swing to the right politically, throughout the industrial sections of the nation. Rightly or wrongly, the impression seems to be gaining that there will be less likelihood of governmental opposition to private business and of the launching of radical measures of an unsettling nature. The stock market is a discounter of the future, and it is reasonable to conclude that the aforementioned tendencies have served to check the drastic bear market of 1937, and to encourage a bull market of moderate proportions during the latter half of 1938.

The importance of the New York Stock Exchange as a major national market is shown by the huge volume of listings of securities. For stocks, on Dec. 1, 1938, such listings aggregated 1,244 separate issues, totalling 1,426,653,000 shares with a market value of $46,081,192,000. Listed bonds, on the same date, represented 1,389 issues, with a par value of $50,301,124,000 and a market value of $45,441,652,000. The number of issuing corporations or governmental units totalled 856 for stock issues and 667 for bonds. Roughly speaking, the New York Stock Exchange serves as the market-place for approximately one-fourth of the nation's total wealth. Of the aforementioned totals, foreign stock listings on Dec. 1 aggregated only 40,759,000 shares with a market value of $1,238,772,000, while private and public bonds of foreign nations stood at $4,661,494,000 par value, with a market value of $2,844,296,000.

Sales of stock on the New York Stock Exchange for 1938 totalled only 297,446,059 shares, and for bonds $1,859,525,825. For stocks the ratio of sales to listings amounted to 17·94 per cent for the first eleven months of the year, the monthly average ratio varying from a minimum of 0·98 per cent for May to a maximum of 2·92 per cent for October. For bonds the ratio of sales to listings for the same eleven months amounted to 3·36 per cent, the monthly average varying from ·24 per cent in August to ·37 per cent in October. Volume of stock sales, it will be noticed, was at a very low ebb during 1938, despite a substantial recovery in prices, the stock total being only 297 million shares as compared with 409 million shares for 1937, and bond sales $1,859,525,825 as compared with $2,790,323,300 for 1937. Net borrowings of New York Stock Exchange members on collateral amounted to only 1·35 per cent of the market value of listed shares on Dec. 1, 1938, whereas at the same date for 1937, 1930, 1929, and 1928, the ratios were respectively 1·69 per cent, 4·06 per cent, 6·32 per cent. and 9·66 per cent.

With respect to the New York Curb Exchange, sales during 1938, as reported by *The New York Times*, totalled only 49,795,922 shares, as compared with 104,178,804 shares during 1937, and 134,843,049 shares for 1936. Bond sales totalled $367,937,000 as compared with $442,993,000 for 1937, and $823,050,000 for 1936. In other words, the sales on this exchange, the second largest organized security market in the western hemisphere, amounted to only about one-sixth the stock sales on the New York Stock Exchange, and to about one-fifth of the bond sales. (S. S. H.)

STOYADINOVIĆ, MILAN (1888–), Yugoslav statesman, was born at Čačak (Šumadiya) on July 23, 1888. Appointed professor of economics at Belgrade university in

1920, he held office as minister of finance (1922–26), stabilized the dinar, was nominated president of the finance committee of the national assembly in 1927, and negotiated a war debts settlement with the U S A During King Alexander's dictatorship he devoted himself to journalism, and was vice-president of the Belgrade bourse and president of the Belgrade Broadcasting Company. In 1934, after the King's assassination, he became minister of finance, succeeded M. Yevtić as premier in 1935, resigned in 1936 (following an attempt on his life), but re-formed his cabinet, taking also the ministry of foreign affairs. He concluded trade agreements with various countries, signed non-aggression pacts in 1937 with Bulgaria and Italy, but his concordat with the Vatican aroused a storm of protest and had to be shelved. In Jan. 1938 he went to Germany for discussions with Herr Hitler; in May, during the first German-Czech crisis, he advised the Czechoslovak government that Yugoslavia would attack Hungary if Hungary attacked Czechoslovakia; in August he was sharply criticized in an opposition manifesto which, describing his regime as a continuation of King Alexander's dictatorship, demanded a restoration of the democratic constitution. On Nov 1, after the dismemberment of Czechoslovakia, he renewed on a firmer basis the Yugoslav-Bulgar treaty of friendship, and, later in the month, reminded neighbouring states that Yugoslavia's frontiers are inviolable. Following a general election on Dec. 11, which returned his government with a 54·5 per cent majority, he resigned (Dec. 21), but immediately formed a new cabinet, himself retaining his former offices. On Feb. 4, 1939, his government failed owing to his opposition to the grant of self-administration to the Croats and Slovenes

STRAITS SETTLEMENTS, THE. Early in 1938 the Governor, Sir Shenton Thomas, announced that he had recommended the Secretary of State to accept the minority report signed by Miss E. Picton-Turbervill, member of the Mui-Tsai Commission which visited Malaya and Hongkong in 1936. Sir Shenton said he hoped other Malayan governments would follow the same course. Miss Picton-Turbervill advised that a new ordinance should be passed, making it compulsory for all transferred girls (except near relatives) to be registered and, if necessary, visited, to protect them from various forms of exploitation. During 1938, there was an important change in the means used for transport of first-class mails between Great Britain and the peninsula, from surface to aeroplanes. Broadcasting made little progress, but telephone facilities to Europe, operating between 9 a.m. and 3 30 p.m in co-operation with the Dutch service, brought Malaya up to the standard enjoyed by Siam for ten years. In Penang, volunteers had to be called out to help the police to deal with rioters in July. For three days Chinese shopkeepers suspected of selling Japanese soya beans were attacked and bicycles suspected of Japanese origin were thrown in the sea. In October the Legislative Council of the Straits Settlements voted a special contribution of £1,250,000 for Imperial defence, payments to be spread over five years. This will not affect the normal yearly defence payments of £500,000 made by the colony. (G. B.)

Area and Population:
Area 1,357 sq. miles. Singapore 282 sq. miles, including Christmas Is. (60 sq. miles) and the Cocos and Keeling Islands (2 sq. miles); Penang, including Province Wellesley, 400 sq. miles; Malacca, 640 sq. miles; the island of Labuan, 35 sq. miles.
Population (Dec. 31, 1937) 1,310,969 (Chinese, 820,897; Malays, 299,092; Indians, 152,131; Europeans, 14,453)
Chief Town (pop 1937): Singapore (688,779).
High Commissioner. Sir T. Shenton Thomas, G.C.M.G
Roads: metalled, 739 miles; gravelled and hill paths, 138 miles.
Finance 1937:
Revenue $37,348,000; Expenditure $42,038,000.
Public Debt (Dec. 31, 1937) . . . $30,000,000
Currency . . Straits Settlement dollar $1 = 2s. 4d.
Education 1937: (average enrolment of scholars)
English schools under government supervision . 57
,, ,, : scholars, 25,406 (Europeans and Eurasians 2,892).
Vernacular schools: Malay, 218; scholars, 25,084
,, ,, : Tamil, 41; ,, 2,362
,, ,, : Chinese, 477; ,, 40,293
Motor vehicles: registered (Dec. 31, 1937): 12,309 private cars, 1,198 hire cars and taxis, 3,854 lorries and vans, 179 other.

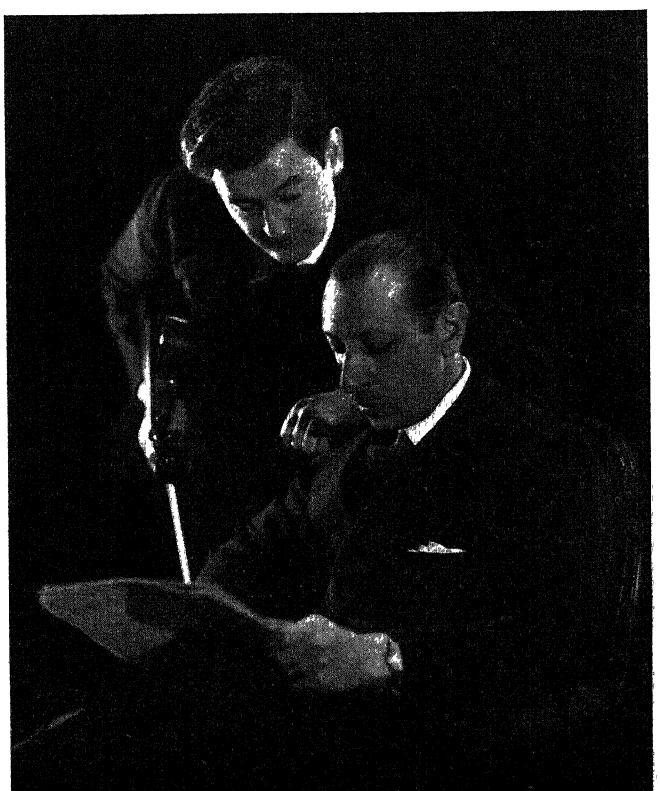
STRATEGIC MINERAL SUPPLIES. The following table presents an evaluation of the ability of the seven major powers to produce their current requirements of the

	United Kingdom			United States			France			U S.S R.			Germany			Italy			Japan		
Aluminium	D		B	B		—	—		—	—		—	D		—	—		C	D		B
Antimony	D		A	C		A	D		A	D		D	D		C	B		B	D		C
Chromium	D		D	—		—	C		—	B		—	C		—	D		C	—?		—?
Copper	D		C	—		—	C		—	B		B	C		C	C		B	B		B
Iron	A		—	—		—	D		—	B		—	C		B	C		C	C		C
Lead	C		C	C		—	D		—	A		B	C		—	A		A	C		—
Manganese	D		—	B		—	D		—	C		D	D		D	C		—	D		D
Mercury	D		D	D		—	D		—	D		D	D		D	—		D	D		D
Nickel	D		—	B		—	D		—	A		D	D		D	D		D	C		C
Tin	C		—	—		—	D		—	C		B	B		—	—		—	D		D?
Tungsten	D		—	—		—	D		—	B		C	B		—	—		—	B		B
Zinc	C		C	—		—	D		—	C		C	—		—	—		—	—		—
Asbestos		D			C			C			—			D			B			C	
Graphite		D			C			D			—			—			A			—	
Magnesite		D			B			D			—			D			C			D	
Mica		D			C			D			—?			C			D			—?	
Petroleum		D			—			C			—			D			D			C	
Phosphates		D			B			—			—			C			D			C	
Potash		D			B			C			—			B			—			D	
Pyrite		D			—			C			A?									—	
Sulphur		D			—			C												—	

more important minerals and metals that fall in the strategic classification. These ratings are only approximate, and it must especially be remembered that in case of emergency the rating could be materially improved in many cases In the rating, a dash indicates a sufficient supply, A, deficiency equivalent to one-third of the demand or less; B, deficiency of one-third to two-thirds, C, over two-thirds, D, complete, or nearly complete dependency. For the metallic minerals, separate ratings are given, the first for ore supply, and the second for smelting capacity, as in many cases these differ widely

It should be noted that while the United Kingdom has a long list, there are within the area of the British Empire plentiful supplies of most of these commodities, providing transport conditions are such that the remote sources remain accessible; on an Empire basis, British dependency would be cut to aluminium and bauxite, antimony, mercury, petroleum, and potash. On a similar basis the position of Japan would also be materially improved, but few items would be completely removed from the list The annexation of Austria has removed magnesite and graphite from the German list, and the recently acquired Czechoslovakian area may make some additional slight improvements. (G A. Ro)

STRAVINSKY, IGOR FEDOROVICH (1882–), Russian musical composer, was born at Oranienbaum, near Leningrad, and was for many years the iconoclast-in-chief among revolutionary composers The son of a well-known bass-singer in the Marinsky Opera House, he studied under Rimsky-Korsakov, began composing in the orthodox romantic style, but soon turned to the barbaric impressionism of the *Fire-Bird* and *Le Sacre du Printemps*, the latter being historically the most important of his works. In post-war years he aspired towards what he termed "pure and abstract music", music devoid of all emotional and ideological content, intended solely for the ear; and a series of cold and artificial fabrications followed, culminating in 1930 in *The Symphony of Psalms*, the last work of real importance he has produced, his subsequent compositions revealing a decline in his inventive powers that the virtuosity of the writing cannot disguise. Many critics trace the cause of this impoverishment to his having lost contact with the original source of his inspiration—Russia and its folk-songs; but it would probably be truer to ascribe it to the absence of any solid and sustaining faith or philosophy on life In 1934 he became a naturalized French citizen. Among his more recent works are: *Le Baiser de la Fée*, ballet (1928), *Capriccio* for piano and orchestra (1929), *Violin Concerto* (1931), *Duo Concertant* for violin and piano (1932), *Concerto* for two pianos (1935), *The Card Party*, ballet (1936), *Dumbarton Oaks Concerto* (1938). He has also published a book entitled *Chronicle of my Life*. Further details of his early work and career may be found in the *Ency. Brit.*, vol. 21, p. 464.



Paul Tanqueray]
STRAVINSKY AND DUSHKIN, THE VIOLINIST

STRIKES AND LOCK-OUTS. In Great Britain there were, in 1937, strikes and lock-outs numbering 1,129. These affected 610,000 workers, and involved a loss of 3,413,000 working days. Of the workers affected, 392,000 were coal-miners, who lost 1,496,000 days The only other industries in which there were considerable disputes were engineering and shipbuilding (91,000 workers, 693,000 days) and transport (53,000 workers, 746,000 days) In 1938 there were 866 strikes, affecting 275,600 workers and involving a loss of 1,335,000 working days. Coal-miners affected numbered 173,200, and lost 697,000 days; engineers and shipbuilders numbered 32,500, and lost 156,000 days. Nineteen thirty-eight was thus a period of less industrial trouble than 1937; but in both years the days lost were few in comparison with the period which ended with the General Strike of 1926, or even the years from 1929 to 1932 The advances in wages and improvements in conditions secured in 1937 and 1938 took place for the most part without stoppages of work.

In 1937 the principal disputes were a coal strike in Yorkshire, arising out of claims for higher wages by the youths employed in the mines; a series of strikes by engineering apprentices in a number of centres, all involving both the question of higher wages and that of the recognition of the right of the Trade Unions to bargain collectively on behalf of their apprentice members (which was conceded); and a large unofficial strike among the omnibus workers employed by the London Passenger Transport Board. It is to be noted that most of the year's strikes, reckoned in terms of numbers involved, ended in the employers' favour. According to the official returns, the employers won in 64 per cent of the cases, and the workers in 11 per cent, the remaining 25 per cent being settled by compromise. Forty-six per cent of the strikers were striking mainly on wage questions, and 10 per cent mainly on questions of hours. A good many of the remaining strikes were on questions of Trade Union recognition, or the employment of non-union labour.

In 1938 there was not a single trade dispute of considerable magnitude. The largest stoppage, affecting 9,700 workers, was in the South Wales coalfield, the issue being the employment of non-union labour. It lasted only a single day, and ended in the non-unionists joining the South Wales Miners' Federation. The only other strike of any size affected 5,100 aircraft workers in the Birmingham area, and ended after a week with a resumption of work pending detailed negotiation on wage-grievances. Most of the other strikes of 1938 were at single collieries or other establishments.

TABLE I

Labour Disputes in Great Britain during 1938

(From *The Ministry of Labour Gazette, January*, 1939)

Industry Group	1938		
	Number of disputes beginning in the year	Number of workpeople involved in all disputes in progress	Aggregate duration in working days of all disputes in progress
Coal-mining	361	173,200 *	697,000
Other Mining and Quarrying	11	700	4,000
Brick, Pottery, Glass, Chemical, etc.	21	3,000	24,000
Engineering and Shipbuilding	76	32,000	156,000
Iron and Steel and other Metal	63	13,200	88,000
Textile	39	7,100	84,000
Clothing	36	6,700	33,000
Food, Drink, and Tobacco	20	4,100	12,000
Woodworking, Furniture, etc.	34	1,900	32,000
Paper, Printing, etc.	4	100	1,000
Building, Public Works, Contracting, etc.	106	13,700	115,000
Transport	49	14,500	40,000
Commerce, Distribution, and Finance	18	2,100	10,000
All other Industries	28	3,300	39,000
Total	866	275,600 *	1,335,000

* Workpeople are counted as many times as they were involved in a dispute during the year. The resulting duplication is slight, except in the coal-mining industry, in which the *net* number of workpeople involved was approximately 115,000 in 1938. The *net* number of workpeople involved in all industries in 1938 was approximately 210,000.

TABLE II

Causes of Labour Disputes in Great Britain, 1938, by month

Cause	J	F	M	A	M	J	J	A	S	O	N	D
Demands for wage increases	4	5	16	13	11	5	11	11	10	10	13	4
Resistance to wage reductions	—	5	8	3	3	2	2	3	2	—	3	—
Other wage questions	16	11	10	12	15	18	9	11	11	9	18	6
Hours	2	2	6	6	5	2	—	4	3	6	—	—
Employment of particular classes of people or individuals	22	21	15	26	22	20	7	21	18	23	30	12
Other working arrangements	10	10	16	12	9	6	8	22	6	9	10	4
Questions involving trade union principles	8	10	7	8	9	9	6	3	8	7	7	4
Sympathetic strikes	—	4	1	2	—	1	—	2	1	—	—	—
Demand for withdrawal of summons to individuals for breach of contract	—	—	—	1	—	2	—	—	—	—	—	—

Compiled from *The Ministry of Labour Gazette*, Feb. 1938–Jan. 1939.



Fox Photos]
TROOPS STANDING BY IN A PARIS UNDERGROUND RAILWAY STATION DURING THE FRENCH GENERAL STRIKE OF NOV 1938

TABLE III

Results of Labour Disputes Settled during each Month of 1938

Results of Strikes	J	F	M	A	M	J	J	A	S	O	N	D
Settled in favour of labour	17	15	15	16	14	12	12	8	13	14	19	4
Settled in favour of employers	16	36	33	38	23	39	15	36	25	33	46	13
Settled by compromises	13	12	22	18	23	9	11	22	16	13	23	8
Negotiations pending, but work resumed	8	8	8	6	12	6	9	5	10	3	12	6

Compiled from *The Ministry of Labour Gazette*, Feb. 1938–Jan. 1939.

This absence of considerable stoppages of work is remarkable. It is true that concessions have been secured in many cases without strikes; but the Trade Unions have continued, despite the industrial recovery of 1937 and the increase of membership, their marked reluctance to use the strike weapon except in the very last resort. This attitude has existed ever since the General Strike of 1926; and since



Keystone]
WORKMEN IN TOULOUSE DEMANDING THE RELEASE OF A STRIKER DURING THE FRENCH GENERAL STRIKE, NOV. 1938

that year strikes have been very few in comparison with their prevalence in the troubled years after 1918. It is possible that the Trade Disputes and Trade Unions Act of 1927, by creating a new category of "illegal" strikes so vaguely defined as to leave Trade Union leaders in much doubt as to the legal position, has played a part in diminishing the number of strikes; but it is not easy to be definite on the point. The following table shows the general course of trade disputes in recent years.

Trade Disputes in Great Britain, 1924—1938

	Number of Disputes	Workers involved (thousands)	Aggregate duration in working days (thousands)
1924	710	613	8,420
1925	603	441	7,950
1926	323	2,734	162,230
1927	308	108	1,170
1928	302	124	1,390
1929	431	533	8,290
1930	422	307	4,400
1931	420	490	6,980
1932	389	379	6,490
1933	357	136	1,070
1934	471	134	960
1935	553	271	1,960
1936	818	316	1,830
1937	1,129	610	3,413
1938	866	276	1,335

For foreign countries, few figures are available as yet for 1938. The most important strikes and lock-outs during the year have been in France; but these have been much less numerous and extensive than in 1936 and 1937. In Dec. 1937 and Jan. 1938 there was a general strike movement in Paris among transport workers and municipal employees, chiefly over wages, which had fallen seriously behind the cost of living. In March there were considerable stoppages in the engineering and kindred trades, especially in Paris, over wages and rights of collective bargaining in the workshops. In September there was serious trouble in Marseilles, where the dock workers refused to work overtime. These and other disputes were settled in the main by compromise, under the procedure for conciliation and arbitration first set up in 1936. This procedure was revised in March 1938, when it was laid down by law that all disputes in industries subject to collective agreements, if not settled by negotiation, should be referred to arbitration. Later in the year the Daladier government proposed to decree special penal measures against strikes in violation of the law, and to pass an act making a secret ballot compulsory before any strike could lawfully be declared. The Trade Unions were strongly hostile to these measures; and their fate is as yet unsettled. At the same time the Daladier government greatly modified the forty-hour week by allowing practically unrestricted overtime; and this led in November to extensive strikes, including a one-day General Strike called by the *Confédération Générale du Travail* as a protest against the government's decrees. The strikers in some cases occupied the factories, as in 1936; but the government promptly evicted them by force. Strong measures of reprisal against the strikers were taken by the government on Dec. 2; but on Feb. 7, 1939, the Chamber adopted a Bill providing for a discretionary amnesty for workers who had been punished for participation in the general strike.

Elsewhere, apart from the United States (*see* below),



Keystone]
A STRIKERS' LOUDSPEAKER CAR PUT OUT OF ACTION WITH TEAR GAS DURING A STRIKE AT A BRASS COMPANY'S PLANT AT DETROIT, MAY 1938

strikes in 1937–38 were most prevalent in India, where there occurred 379 strikes and lock-outs in 1937, involving 648,000 workers and a loss of nearly nine million days. This was very much the highest point since 1929, when 141 strikes among 530,000 workers had an aggregate duration of over 12 million days. In 1935 days lost were under a million, and in 1936 only 2,358,000. Ireland also showed an extension of strike activity in 1937, but on a small scale, 27,000 workers being involved and 1,755,000 days lost, as against 9,000 and 186,000 in 1936. There were small increases in trade disputes in Australia, New Zealand, South Africa and Canada; but in all these countries the numbers involved were relatively small.

Of other European countries, Poland had the largest number of disputes, 2,103 stoppages involving 545,000 workers, and a loss of 3,297,000 days. These figures were, however, smaller than those for 1936, though substantially larger than for previous years. Czechoslovakia had an increased number of disputes in 1937, affecting 120,000 workers as against 55,000 in 1936, and involving 1,129,000 days lost as against 637,000. In Belgium, Holland, Switzerland and Rumania there were few stoppages of work in 1937–38, and in the Scandinavian countries, except Finland, almost none. In both Sweden and Denmark many important collective agreements ran out in the early months of 1938; but they were in practically all cases renewed by negotiation, without stoppage of work. In Germany and Italy strikes are known to have occurred, despite their prohibition by law and the absence of Trade Unions; but there are of course no figures to be had.

In both China and Japan there were small strikes in 1937, but no extensive strike movements. In 1938, owing to war conditions, there were practically no strikes.

It should be noted that, outside the democratic countries, there is a continuous tendency for governments to limit by law the rights of Trade Union organization and strike action. For example, Brazil and 'Iraq are among the countries which have passed laws confining the rights of organization to registered and state-supervised associations, and in Latvia a corporative system, modelled on those of the Fascist countries, has been introduced. Bulgaria in 1937 applied a somewhat similar system. These practices commonly lead to a virtual, or even a complete prohibition of strikes, and to the fixing of wages and conditions under government authority. Only in the parliamentary countries does the

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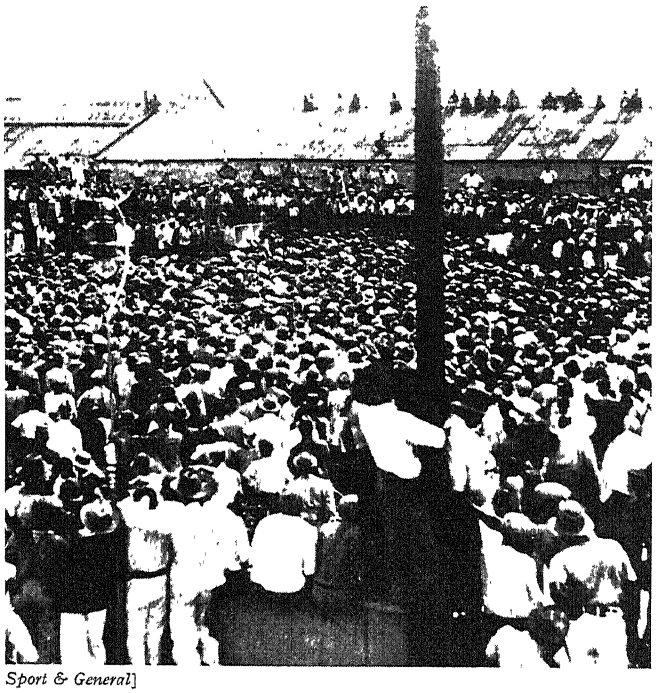
Keystone]
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Sport & General]
ALEXANDER BUSTAMENTE, THE LABOUR LEADER, ADDRESSING STRIKERS AT KINGSTON, JAMAICA, MAY 1938

right to strike effectively exist; and even in such countries it is not unlimited—witness the British Trade Disputes Act of 1927 and the measures now being carried through in France. (G. D. H. C.)

United States. In 1938 strike activity subsided to a low level in the United States. In Jan. 1937, according to the figures of the United States Bureau of Labor Statistics, 2,720,281 man-days were lost because of strikes, but in Jan. 1938 only 470,138. During the first eight months of 1937, the loss of man-days was 24,147,093, but during the same period of 1938 it was 7,162,720—only 29 per cent as many. During the peak month of 1937, June, there were 4,993,408 man-days lost; during May, the peak month of 1938 (down to August), only 1,173,549. From Jan. to Nov. 1938, there were but 1,477 strikes and 635,179 workers involved. The strike history of 1938 was altogether different from that of 1937. Strikes decreased sharply both in numbers, size and in the dramatic factors so characteristic of 1937. The total number of strikes was about one-half the number in 1937, and there were only two strikes in which more than 10,000 workers were involved: those of the hosiery workers of Pennsylvania, New Jersey, and New York, and of lorry-drivers in New York and New Jersey Strikes no larger nor more significant than that at the Goodyear Rubber Company in May, or the 15-week lockout and strike of the fur workers of New York City, constituted the outstanding strikes of 1938. The quieting down which seems to follow inevitably a strike-wave like that of 1936–37, plus the effects of the 1937–38 depression, apparently calmed the troubled waters of American industry. Two other factors were also of major importance. The National Labor Relations Board announced in July 1938 that it had successfully handled 11,180 labour disputes in three years, of which 6,090 were settled by agreement of the parties concerned. The functioning of the Board tends to decrease strikes. The struggle between the American Federation of Labor and the Congress of Industrial Organizations also diminished beyond doubt their aggressive attitude.

Here and there, as among the warehouse workers of San Francisco and in the lumber and sawmill strike in Oregon, the split in the ranks of labour resulted in strikes, but the activity of the National Labor Relations Board and State boards, such as the Wisconsin Labor Relations Board, in the adjustment of conflicts between the two labour groups prevented these conflicts (in most instances) from ending in strikes. This was true both in 1937 and 1938.

Stay-in strikes, while numerous, were not as important a part of the American strike picture in 1937 as they were in 1936, and were relatively rare in 1938.

The monthly reports on strikes issued by the United States Bureau of Labor Statistics indicate that close to one-half of the strikes of 1938 involved some question of union recognition, with wages the other major issue. This distribution was characteristic of both 1937 and 1938.

Canada. There were 349 strikes in Canada in 1937, involving 84,219 workers and the loss of 768,534 man-days. In 1936 there were but 156 strikes, with 34,812 strikers and 276,997 days lost; a rather typical strike record for Canada. In 1938 there were 180 strikes during the first ten months, involving 24,462 workers and the loss of 140,725 man-days This was close to the 1936 record and therefore typical. The year 1937 ranks among Canada's worst strike years. (*See* also LABOUR, WAGES AND HOURS.)

STROUD, WILLIAM, British physicist, was born at Bristol on Feb. 2, 1860, and died at Torquay on May 27, 1938. He was educated at Bristol Grammar School and Balliol College, Oxford, and at the Universities of Heidelberg and Wurzburg. From 1885 to 1909 he was Cavendish Professor of Physics at the University of Leeds. He was a director since 1909, and chairman since 1931, of the firm of Barr and Stroud, Ltd., the famous manufacturers of range finders, periscopes, and other optical instruments. In collaboration with his partner, the late Professor Barr, Dr. Stroud invented the infantry range finder, which became so familiar an instrument during the World War, as well as a number of other types of range finder.

SUBSIDIES (SHIPPING AND SHIPBUILDING). As for some years past, the shipping and shipbuilding countries have been divided between those who are in favour of state aid, often because they are forced into it by international competition, and those against it, but the latter are gradually losing ground. Even in the Scandinavian countries and Holland the opposition is failing.

In Britain, the tramp shipping subsidy was not paid for 1937 on account of the average level of freights and has now lapsed, although there has been a powerful agitation, backed by sound statistics, for its revival. More picturesque has been the question of the "All-Red" route to Australia via Vancouver, which cannot survive against subsidized competition without state aid, but the discussions between the interests and various governments concerned were so prolonged that, by the time decision was reached, shipbuilding prices had increased so much that the scheme was impracticable and had to be dropped.

In the United States the growing realization that large sums were being wasted has led to a rationalization of the whole subsidy scheme. Eighty-five per cent of the subsidized fleet was at least fifteen years old and there was expensive internal competition. Under the new system the state comes first, and aid is based primarily on the difference of American costs. Heavy claims for cancelled contracts have mostly been compromised. The new system has been linked with shipbuilding on account of the age of the ships, and the government has undertaken the construction of

ships for essential services. It has also taken over the control of the Dollar Line (now the American President Line), and the fear is that the tendency is towards state ownership, which nobody desires.

Japan conceals most of her subsidies from foreign observation, but the naval demand for a 19½-knot trial speed has led to very uneconomical tonnage commercially, and the China war has proved the modern merchant service ill-balanced for the supply services. Here the tendency is decidedly towards state ownership.

In Germany also the figures are kept confidential, the main published principle, protection against depreciated currencies, being capable of covering many things In Italy the gigantic subsidized building scheme for 1,000,000 tons of liners and 250,000 tons of tramps is meeting with technical difficulties, but the running subsidies connected with it include freedom from income-tax for five years.

France has modified her state aid to cover the extra expense incurred by recent social legislation, especially the forty-hour week, and the changes have not all been acceptable. Special national services, conspicuously oil transport, have demanded special measures and further changes are expected. The Belgian government has been strongly urged to start a general subsidy system and to wipe out shipowners' loans, as Holland has done, but has only been willing to launch a credit scheme with moderate running help. Norway's state aid is chiefly in the form of building loans, but both her government and the Swedish are being pressed to consider far bigger schemes. (F. C. B)

SUEZ CANAL. At a meeting in Paris on June 13, the Suez Canal Company proposed a dividend of 820 frs., compared with 600 frs. in 1937. In December an interim dividend of 335 frs. was declared, as against 300 frs in 1937. Receipts for 1938 were 1,642,965,000 frs. (£9,664,000) compared with 1,448,000,000 frs. in 1937. The increase, however, is a result of the depreciation of the franc as against other currencies; actually, in terms of sterling, receipts have dropped. A reduction in the Canal dues took effect from Dec. 15, the transit tariff for loaded ships being lowered from 6*s.* a ton to 5*s.* 9*d.*, and that for ships in ballast from 3*s.* a ton to 2*s.* 10*d.* There had been two previous reductions since July 1936.

On May 30 it was announced that Lord (then Sir Maurice) Hankey, on his resignation from all British government appointments, was to become a director of the Suez Canal.

It was widely felt that, among the various claims against France which were given such prominence in the Italian Press in the latter part of the year, the most seriously intended was that for a share in the control of the Suez Canal. M. Edgar Bonnet, vice-chairman of the company, has however pointed out that the status of the Canal cannot be changed without the consent both of the Egyptian government (to whom the concession will revert in thirty years), and also that of the company itself.

SUGAR. The relation of world production to consumption and stocks has ceased to play the important part on the sugar market it formerly did, because supplies for the world market are now regulated by the International Sugar Agreement of May 6, 1937, and supplies for the United States market are regulated by the American Sugar Act of 1937. The relation between the quotas fixed under those regulations for any given year and the requirements of that year is, therefore, now the dominant market factor. The following tables give production, consumption, and stocks in metric tons raw value.

	1938	1937
Production:		
Cane Sugar	16,332,000	16,480,000
Beet Sugar	10,445,000	11,058,000
Total	26,777,000	27,538,000
	1937–38	1936–37
Consumption	25,645,000	26,454,000
	Aug 31, 1938	Aug 31, 1937
Stocks	9,050,000	7,426,000

The World Market. The continuation of the Sino-Japanese War, which results in a loss of outlet for about 300,000 tons of sugar in the Far East per year, was the worst factor in the sugar position, as it undermined the whole basis on which world quotas had been fixed in the International Agreement. Moreover, 1938 opened with a congestion of sugar supplies in the world market largely due to the fact that many countries had made big shipments before Sept. 1, 1937, in order that they should not count as exports under the International Agreement, the first quota year of which began on that date. Also, owing to delay in the ratification of the International Agreement by several important countries, the International Sugar Council was not able to meet until April 27 in order to adjust the quotas for the first quota year to take account of the reduced requirements. This made for inactive market conditions during the first three months of the year. The reduction of quotas for the first year made by the International Council in April and the further reduction of quotas for that year, together with a drastic cut amounting to 412,500 metric tons for the second year made by the Council in July had, however, a very favourable effect. This was increased by the statement made by the Chancellor of the Exchequer in his Budget speech in the House of Commons on April 26 that the British government had made secret purchases of emergency sugar stocks, and by news that special war stocks were also being built up in some other countries.

In September there was another advance of prices as a result of the Central European crisis, and soon after, news of abnormally bad sugar beet crops in many of the European countries, including the United Kingdom, involving increased demands of sugar from the free market suppliers and prospects of better outlets in the Far East owing to a small crop in British India, stimulated a further rise. Although average prices in the world market, as shown by the following prices per cwt. c.i.f. U.K./Continent, were worse than in 1937, the year 1938 closed very buoyant:

	1938	1937
High	6*s.* 4½*d.*	6*s.* 10½*d.*
Low	4*s.* 9*d.*	5*s.* 7½*d.*
Average	5*s.* 5*d.*	6*s.* 4¼*d.*

Moreover, prices for the two years are not really comparable, as there was a big wave of speculative investment in sugar in 1937 owing to the calling of the International Sugar Conference, whereas the improvement in prices between the beginning and end of 1938 was entirely due to a better statistical position, and outside speculation had no hand in it.

United States Market. Prices were bad during 1938, as will be seen from the following figures of New York sugar prices for 96° centrifugal—Cuban basis—prompt shipment to New York—net cash (without duty) in cents per lb.

	1938	1937
Highest	2 350	3 050
Lowest	1 750	2 250
Average	2 040	2 547

The trade considered the 1938 quotas under the Sugar Act, announced by the Secretary of Agriculture in Dec 1937, much too high for the requirements of the market, and it also came to the conclusion, from various official pronouncements, that the government was not in favour of an improvement of sugar prices. A reduction of quotas by 73,659 metric tons in June was considered too slight to involve much improvement, but the announcement on Aug. 19 that the domestic beet sugar deficit estimated at some 200,000 to 300,000 metric tons would not be reallotted to other producing areas, which was tantamount to a reduction of quotas by that amount, had an immediate favourable effect. There was a further advance in September owing to the political crisis in Europe, and again in November when it was announced that the duty on Cuban sugar might be reduced from 90 cents to 75 cents per 100 lb The whole of this improvement was, however, wiped out by the announcement by the Secretary of Agriculture on Dec. 3, 1938, of 1939 quotas which were nearly as big as the 1938 quotas and were considered by the trade as involving excessive supplies of some 270,000 metric tons.

SUICIDE STATISTICS: *see* VITAL STATISTICS.

SUMATRA, Netherlands Indies (*q.v.*), with its large area and small population, was chosen in 1938 for extensive experiments in colonization by the natives of Java (*q v.*) and neighbouring islands. Settlements were founded in new areas in Palembang, and a search was instituted for other districts suitable for similar schemes. With a view to the speedier development of the island, the Atjehspoor, a government narrow-gauge railway running for 90 kilometres between Besitang, where it connects with the Deli Spoorweg, and Medan, has been arranging trial services at night to Koeta Radja, the northern terminus in Atjeh, 608 kilometres from Medan. The mails from Koeta Radja now reach Medan in one day and passenger coaches are to be attached to the train. During the year there was much activity in the Medan area in surveying for oil. The three principal companies, N.P.P M., N.K.P.M., and B.P.M., sent geological parties into the field, and the N.P.P M. announced that it would begin drilling early in 1939 in the Rokan concession The other two concerns are operating in Atjeh and in Deli, N.E. Sumatra. Towards the end of the year a remarkable improvement in economic conditions was registered on the east coast where many small and medium sized houses were built.

Area and Population:

Area 163,145 sq. miles. (*See* also NETHERLANDS INDIES and JAVA).

Population (1930 census): 8,238,570 (Europeans 28,707; Natives, 7,733,620; Chinese, 476,243).

Chief Towns: Medan (76,584); Palembang (108,145); Padang (52,054). (G. B.)

SUNDAY SCHOOLS. The World's Sunday School Convention at Oslo, 1936, reported 369,510 Sunday schools in 129 countries, with 3,145,895 teachers and 34,139,614 scholars. This represents an increase in four years of 2·75 per cent, considerably less than in previous quadrenniums. Africa and South America showed large increases; Europe a small decrease. The 1937 total of scholars in the various churches of Great Britain was 3,967,350; and the latest statistics show a decline of some 94,000. The 20th quadrennial convention of the International Council of Religious Education, successor to the International Sunday School Association, was held in Columbus, Ohio, June 28–July 3, 1938, with enrolment of 2,178 delegates representing 47 Protestant denominations in the United States and Canada. A national convention of Cuban Sunday school workers, held at Camaguey, Oct. 10 12, resulted in the organization of the Cuban Council of Christian Education. The churches of Puerto Rico secured a director of religious education who will also serve as pastor for the students of the University of Puerto Rico—the first time that this plan, widely used in the United States, has been inaugurated in a Latin American university. In Brazil, a reorganization integrates the work of Sunday schools with the churches represented in the Evangelical Federation

Advances in Sunday school work were reported in the Balkan states, especially in Bulgaria, and in the Baltic states. The National Committee for Christian Religious Education in China continued its work without interruption, publishing Sunday school literature, and guiding the training of lay workers in the free areas of China, and administering relief as well as conducting Sunday schools for refugees in territory controlled by the Japanese. The Korea Sunday School Association was disbanded by governmental order, owing to its opposition to the requirement of worship at national shrines. In India, new steps were taken to organize Sunday schools in rural villages.

Marked increase in Sunday school enrolment appeared in Africa. One district in the Belgian Congo, which had 5 schools with 285 pupils in 1937, reported 83 Sunday schools with over 6,000 pupils in 1938. The next World's Sunday School Convention will meet in Durban, South Africa, July 1940.

The World Sunday School Association was officially represented at the conference held in Utrecht, May 9–13, 1938, to devise a constitution for the proposed World Council of Churches.

SUPREME COURT OF THE UNITED STATES. The retirement of Mr. Justice Sutherland early in 1938, the appointment of former Solicitor-General Reed as the 77th member of the U.S. Supreme Court, and the alignment of Chief Justice Hughes and Mr. Justice Roberts with the liberal wing of the Court mark a definite shift of the majority from the so-called conservative group to the so-called liberal.

Dissenting votes show that Chief Justice Hughes did not register a single dissent at the Court's recent term. Mr. Justice Brandeis cast only two dissenting votes as compared to sixteen dissents at the term at which the conservative majority was in the ascendancy. Mr. Justice Stone dissented in only six cases as compared with sixteen at the previous term. Justices Butler and McReynolds registered respectively 22 and 29 dissents at the October 1937 term, and only five and six at the Oct. 1938 term.

In ten cases in which Mr. Justice Black cast dissenting votes he was not joined by any member of the liberal group, consisting of Justices Brandeis, Stone, and Cardozo. Single dissents were registered also by Mr. Justice McReynolds in four cases, Mr. Justice Butler in one case, and Mr. Justice Reed in one case.

In only ten out of 56 such cases did the Court sustain objections to the validity of statutes, ordinances, taxes, orders of boards and commissions, and judicial proceedings. In rejecting objections in the other 46 cases, the Court gave to State and Federal Constitutions a liberal interpretation, and adopted and accorded to legislatures and administrative officials wide latitude in the exercise of the police power and the power of taxation.

The Court's liberal majority was confirmed when to the vacancy left by the death of Justice Cardozo (*q.v.*) in July there was appointed in Jan 1939 Professor Felix Frankfurter, of Harvard university

SURINAM (Dutch Guiana), a Dutch colony in north-eastern South America, area, 54,291 sq. m., capital, Paramaribo (pop. 52,368); acting governor, Dr J C Brons. The population on Jan. 1, 1938, was 150,896 besides an estimated 17,000 negroes and 3,500 Indians in the jungle. The colony has an appointed governor and a partially elected council. There are 85 miles of railways, and fairly good roads in the coastal district. External communication is by steamship and bi-weekly air service. Imports, chiefly manufactured goods and foodstuffs, totalled 6,866,542 florins in 1937 (Netherlands, 38 per cent; United States 22·4 per cent), a 20 per cent increase over 1936; exports were 7,613,210 florins (United States, 64·2 per cent; Netherlands, 22·5 per cent), a 47 per cent increase. Bauxite, to the United States, accounted for nearly 64 per cent of the exports; gold (396,766 gr. produced in 1937), sugar, molasses, coffee, rice, and miscellaneous agricultural products are also important. The export commodities constitute the principal products Government expenditure in 1937 was 6,513,323 florins, with revenue only 4,066,276 florins, necessitating a Netherlands government subsidy to cover the deficit. The monetary unit is the florin (value: approx. 2*s.* 1*d.*). Surinam has 132 schools (43 government), with 21,853 enrolment in 1937, besides 33 Indian and Negro schools in the jungle. (L. W Be)

SWAZILAND. The territory is administered by a resident Commissioner under the High Commissioner for South Africa. The paramount chief of the Swazis is Sobnuza II. Concessions to Europeans have left only one-third of the territory to the natives. A native council composed of the Indunas of the nation assists the administration, and an elected advisory council of Europeans advises on European affairs. The primary interest of the Swazi is the possession of cattle; methods of animal husbandry and agriculture remain primitive and progress is hampered by disease and climatic conditions. Erosion, owing to overstocking and unskilled ploughing, forms a serious problem. As many as 7,000 to 8,000 young men leave the territory annually to work on the Rand mines. The question of transfer of the territories has assumed considerable importance (*see* Basutoland). The Swazi are said, generally speaking, to oppose incorporation within the Union. (J. L. K.)

Area and Population:
Area 6,705 sq. miles.
Population (census 1936) Whites 2,740, Coloured 150,494.

Production 1937:

Gold	241,044 oz.	Cattle	402,970
Tin	155 tons	Goats	116,000

Exports: total (1937) £201,236.
Roads: 654 miles open for motor traffic.
Finance 1937:

Revenue, ordinary	£119,288
Expenditure, ordinary	£151,320
Public Debt	£35,000

SWEDEN. Early during 1938 problems of neutrality were repeatedly canvassed. In February the creation of an air-fleet, the first in Scandinavia, was announced. After Germany's absorption of Austria in March, an additional £3,500,000 was allotted for defence, and later, with developments in view, the entire *Landstorm* was to be called up and its scope extended. In April Hr. Sandler, the Foreign Minister, broadcast to the world a speech emphasizing the understanding between Sweden, Norway, Denmark, and Finland, and describing Scandinavia as "an island of neutrality". In December he announced attempts by German authorities to carry out "organization" in Sweden; Swedish firms trading with Germany had been informed of the unsuitability of their having "non-Aryan" employees. June 27 being the tercentenary of the founding of "New Sweden" at Delaware, U.S.A., the Crown Prince and Princess, with their son, made the journey to be present; the Crown Prince was taken ill while in America, but recovered. Later, in November, they paid a visit to England, in the course of which the Crown Prince had an interview with Lord Halifax. At home the prosperity of Sweden was referred to in a speech from the throne in January, and plans were outlined for public works to foster it. A lock-out of hotel and restaurant employees in Stockholm soon spread widely, affecting even railway restaurant-cars; after lasting nearly a month it was settled in February, on the basis of a ten to twelve per cent increase in wages. In May an eight-hour day in Swedish ships of 2,000 tons and over was ordained, to operate from Jan., 1939, and in June a law providing for holidays with pay was passed. Eightieth birthdays were celebrated in June by King Gustav and, in November by Dr. Selma Lagerlöf, the novelist, first woman recipient of the Nobel Prize (1909). (H. Fw.)



Fox Photos]
KING GUSTAV, BETWEEN KING HAAKON OF NORWAY (LEFT) AND KING CHRISTIAN OF DENMARK, DURING THE CELEBRATION OF HIS 80TH BIRTHDAY IN STOCKHOLM, JUNE 16, 1938

Area and Population:
Area 173,347 sq. miles.
Population (est. Dec. 31, 1937) 6,284,722.
Chief Towns (pop. Dec. 31, 1937): Stockholm (566,964), Göteborg (269,581), Malmö (147,796), Norrköping (68,474).

Ruler. King Gustav V.
Language. Swedish.
Religion. Lutheran Christian.

Production 1937:

Butter	73,000	metric tons
Cheese (1936)	36,100	,, ,,
Wheat	700,000	,, ,,
Barley	206,600	,, ,,
Rye	412,800	,, ,,
Oats	1,265,300	,, ,,
Potatoes	1,887,100	,, ,,
Beet Sugar	310,500	,, ,,
Wood Pulp	3,430,000	,, ,,
Coal	460,000	,, ,,
Iron Ore	15,000,000	,, ,,
Pig Iron	693,000	,, ,,
Steel	1,106,000	,, ,,
Timber	35,000,000	cubic metres

Shipbuilding, gross tonnage launched . . 161,000

Industrial Production Index (average 1937: 1929=100), 149

Industrial Production Index (August 1938: 1929=100), 140.

Labour:

Index of Employment (average 1937: 1926–30 = 100), 117·3.

Index of Employment (June 1938: 1926–30 = 100), 118·1.

Unemployed, trade union returns (average 1937) 67,351

,, ,, ,, ,, (June 1938) . 57,285

Overseas Trade 1937, merchandise:

Imports	2,123,209,000	kroner
Exports	2,000,012,000	,,

Communications:

Roads (Dec. 31, 1936)	52,697 miles
Railways (Dec. 31, 1937)	10,468 miles
Airways (1937), Miles flown	1,124,576
Shipping (June 30, 1938), gross tonnage	1,575,700

Finance and Banking:

Revenue (1937–38)	1,449,382,000	kroner
Expenditure (1937–38)	1,358,609,000	,,
Budget Estimate (1938–39)	1,528,325,000	,,
Public Debt (Dec. 31, 1937)	2,341,950,000	,,
Notes in circulation (Sept. 30, 1938)	1,083,000,000	,,
Gold Reserve ,, ,, ,,	684,000,000	,,
Exchange Rate (average 1937–38)	19·40 kroner=£1 stg.	

Education:

Elementary, number of scholars (1936)	600,100
Secondary, ,, ,, ,, (1937)	57,522

Defence Forces, 1938. The Army consisted of 1,780 officers, 7,282 N.C.O.s and men, and an annual contingent of about 14,300 conscripts. Navy and Coast artillery, 450 officers, 4,960 N.C.O.s and men, and an annual contingent of about 4,900 conscripts. Air Force, 255 officers, 175 N.C.O.s, 1,015 enlisted men, and an annual contingent of 2,370 conscripts.

Miscellaneous, Dec. 31, 1937:

Motor vehicles licensed: cars, 191,947; motor-cycles, 44,164.

Wireless receiving-set licences	1,074,473
Telephones, number	738,698

SWIMMING. Both in Great Britain and in the United States swimming is widely recognized as a means of physical fitness, as is exemplified by the action of the British Board of Education in accepting the recommendation of the Grants Committee of the National Fitness Council to make grants-in-aid to the English and the Welsh Amateur Swimming Associations to assist the training of instructors in swimming and life-saving.

The principal events of 1938 clustered round the Empire Games, held at Sydney in February, and the European Championships (in which the U.S.A. also entered), held for the first time at the Empire Pool, Wembley, in August. At the former, of the thirteen swimming events England won six, Australia four, and Canada three; in the diving Australia won three and England one.

Seventeen nations were represented at Wembley, and many records were broken. The Cup of Europe, for the leading country in the men's events, went to Germany; the Bredius Cup (for women) to Denmark; and the Harold Fern trophy, for consolation events, to Norway, the Dubonnet Cup for water-polo was retained by Hungary, who won all their six games. B. Borg (Sweden), Miss R. Hveger (Denmark), and E. Weiss (Germany) were the outstanding competitors.

Many records went by the board in 1938, the chief of which (with times in minutes, seconds, and tenths) were the men's free style 500 yards (5–24·9) and 500 metres (5–56·2), both to R. Flanagan of the U.S.A., the 1,000 metres (12–33·8) and the 1,500 metres (18–58·8) to T. Amano of Japan; and the 400 metres breast-stroke (5–43·8) to A. Hema of Germany. The women made records in the (free style) 200 metres (Miss R. van Veen, Holland, 2–24·6), while to Miss R. Hveger of Denmark fell the 300 yards (3–25·3), the 300 metres (3–46·9), the 400 metres (5–6·1), the 440 yards (5–12·8), the 500 yards (5–57·9), the 550 yards (6–14·8), and the 500 metres (6–45·7), the 880 yards record was taken by Mrs. K. R. Thompson, U.S.A. (11–33·2), and the 1,000 yards by Miss T. Peterson, Denmark (13–15·9), two back-stroke women's records also fell, the 100 metres to Miss C. Kint, Holland (1–13·5) and the 400 metres to Miss J. van Feggelen, her countrywoman (5–41·4). Miss O. V. Bassett-Lowke, of Northampton, beat the record for the women's long-distance championship (Kew to Putney, 5 miles 60 yards) at 1 hr. 6 min. 13·8 sec., the men's record for the course being 1 hr. 2 min. 57·3 sec. set up by C. Deane in 1937.

The English mile championship was won by R. H. Leivers (22–7·2); the plain diving championship was retained by C. D. Tomalin; Middlesex, defeating Surrey, were winners of the county championship for the fifth successive time, and Essex of the county water-polo championship for the sixth.

The Channel was swum twice during the year; by Frau Wendell (German), on Aug. 25 in 15½ hrs., and by Mr. F. Wheatcroft, of Rotherham, on Aug. 27 in 13¾ hrs., both on the Cap Grisnez–Dover course. On July 29 the Danish woman champion, Miss Jenny Kammersgaard, swam the Baltic from Gjedser (Denmark) to Warnemunde (Germany), nearly thirty miles, in 41 hours. (L. H. D.)

The outstanding features of 1938 for America was a tour of Europe by a national American team of ten men, who defeated an All-Europe team, 38 to 36, in Berlin. In the encounter, Takashi Hirose, Paul Wolf, Otto Jaretz, and Peter Fick lowered the world's record for the 400-metre relay from 4 min. 2 sec. to 3 min. 59·2 sec., while Ralph Flanagan swam 400 metres free style in 4 min. 46·2 sec., long course, the year's rating performance for this event.

SWING MUSIC: *see* JAZZ.

SWITZERLAND. In the troublous conditions of 1938, Switzerland, more than most countries, was preoccupied with her independence and the maintenance of real neutrality (not completely guaranteed to her by the 1920 Declaration of London). In April a declaration in strict terms was adopted and in due course formally recognized by Germany and Italy. (The position of the League of Nations at Geneva was defined as that of "guest".) Among very numerous steps in furtherance of the ideal were suppression of the Communist party in Vaud, counter-measures against the entrance of German and Austrian refugees, the charging of frontier mines (September crisis), the arrest of suspected foreign spies and propagandists, and restriction of press criticism of dictator-ruled countries. Defences to

cost £50 millions include a new line of forts. Romansch was recognized (February) as an official language—the fourth. A new Federal Penal Code was adopted (July). A blizzard (April) caused damage, estimated at £2 millions, to vines and crops. On Dec. 15 Philippe Etter, chief of the department of the Interior, was elected President of the Swiss Confederation for 1939. (H. Fw)

Area and Population :
Area 15,944 sq miles.
Population (est. Dec. 31, 1937) 4,183,000
Chief Towns (pop. 1930): Zürich (321,380), Basle (161,567), Geneva (123,046), Berne (120,933), Lausanne (88,730).

Government. Federal Council of seven members President (1938), Johannes Baumann, (Jan. 1, 1939), Philippe Etter.

Languages (census 1930) German, 2,924,000; French, 831,000; Italian, 242,000, other, 69,000

Religion. Protestant 2,330,000, Rom. Cath. 1,666,000

Production 1938 :

Milk	26,800,000	hectolitres
Butter	26,500	metric tons
Cheese	52,500	,, ,,
Wheat	165,500	,, ,,
Rye	30,700	,, ,,
Oats	23,900	,, ,,
Potatoes	877,900	,, ,,
Beet Sugar	10,900	,, ,,

Labour :
Index of Employment (average 1937: 1929=100) 78·1.
,, ,, ,, (,, June 1938: ,,) 77·7.
Unemployed (average 1937) wholly 10%, partly 2·5%.
,, (,, June 1938) ,, 6·1% ,, 4·8%.
Number unemployed (average 1937) . . 71,130.

Foreign Trade 1938 :

Imports	1,606,902,000	francs
Exports	1,316,572,000	,,

Communications :
Roads (1935) length 28,030 miles.
Railways (1936) length 3,690 miles.
Airways (1937) passengers 60,371.
,, ,, goods carried 208,945 metric tons.

Finance and Banking (Confederation) :

Revenue, ordinary (1937)	522,068,000	francs
Expenditure, ,, ,,	537,009,000	,,
Revenue, ordinary (est. 1938)	519,800,000	,,
Expenditure, ,, ,,	542,900,000	,,
Public Debt (Jan. 1, 1938) excluding railways	2,658,363,000	francs
Note Circulation (Nov. 23, 1938)	1,647,554,230	,,
Gold Reserve ,, ,,	2,880,471,767	,,
Exchange Rate (average 1937)	21·55 francs=£1 stg.	
,, ,, (Nov. 26, 1938)	20·40 ,, ,, ,,	

Education 1937 :

Elementary	471,438	scholars
Secondary	89,235	,,
Universities	10,981	,,

Miscellaneous :
Motor vehicles licensed (Sept. 30, 1937) 120,844.
Wireless receiving-set licences (Dec. 31, 1937) 504,132.
Telephones (Sept. 30, 1937) (number) 187,526.

SYDNEY. The celebrations of the 150th anniversary of the landing of Capt. Arthur Philip at Sydney Cove were successfully carried through in Jan. and Feb. 1938. They were attended by members of the Empire Parliamentary Association, including Earl de la Warr as representative of the United Kingdom Government, and there were eight visiting warships in the harbour. The Empire Games were held in Sydney, which was also chosen as the site for meetings of a number of Australian scientific and professional organizations. Two important unofficial imperial conferences were held in Sydney in 1938: the Empire Producers Conference and the British Commonwealth Relations Conference (*q.v.*). The former agreed on a scheme for organizing export control associations in each Dominion and linking them on an Empire basis.

In Aug. 1938 Sydney became the terminus for the "all-up" air-mail service by flying-boat from England. Against local opposition, Rose Bay was adopted as the flying-boat base, pending the construction of a base at Botany Bay.

In spite of a special effort, the Labour Party failed to increase its representation on the City Council at the elections of Dec. 1937. In the result, twelve Reform and eight Labour aldermen were elected. (H. V H)

SYNTHETIC FUELS AND LUBRICANTS. Synthetic methods for the production of oils are of two types. From the first, catalytic hydrogenation (due to Bergius), a large range of liquid products is produced The lighter products are purified to produce motor spirit, and the heavier ones either used directly as liquid fuels or recycled to produce further quantities of spirit. In this way, from a suitable coal there can be obtained upwards of 160 gallons of motor spirit per ton of coal processed. Additional coal is required for hydrogen production, heating, etc, and this amounts roughly to an extra ton for each ton of coal processed

The second type of process first involves the carbonization of coal to produce the usual range of solid and liquid products. The coke is then gasified by means of steam into a mixture of carbon monoxide and hydrogen. After adjustment of the hydrogen quantity to a proportion of one volume of carbon monoxide to two of hydrogen, the mixture is passed at atmospheric pressure over catalysts of nickel or cobalt salts to which aluminium, thorium, or manganese have been added as promoters. Various gaseous, liquid, and solid hydrocarbons, consisting mainly of straight chain paraffins and olefines, are obtained as a primary material. This primary material can be cracked to obtain high motor spirit yields, or distilled to give a range of waxes, diesel oil, and motor spirit. For efficient working, sulphur compounds must first be removed from the gas. Temperatures of 200° to 300°, together with suitable catalysts, are used for sulphur removal, whilst temperatures of from 180° to 210° C. are used for the synthesis. The process is known as the Fischer-Tropsch process, and has been developed in Germany.

Commercial Development of the Hydrogenation Process. Of recent years, since the pooling in 1931 of their patents by the three great producing companies of Britain, Germany, and the United States, whereby the rights are invested in the International Hydrogenation Patents Coy., England and Germany have been responsible for the rapid technical progress which has been made, especially in dealing with coal or tar oils. In both countries it has been recognized that at present motor spirit cannot be produced commercially without government help. In Great Britain this help is now in the form of a guaranteed preferential duty of 8*d.* per gallon on motor spirit and diesel oil used in motor vehicles, for a period of twelve years from 1938. In 1934 the brown coal producers in Germany were required by the State to form the Braunkohle-Benzin A.G. Two plants were erected to produce 150,000 tons each of spirit from brown coal and tar, and the output of the Leuna Works was increased to 400,000 tons per annum. In 1935 I.G. Farbenindustrie commenced the erection of a plant for 125,000 tons of spirit annually from bituminous coal and tar. All these are now working with a production of 820,000 tons, and five more are under construction with a capacity of one million tons. It is estimated that by 1939

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the production in Germany of oil from coal and tar by hydrogenation will amount to about 1,100,000 tons

In Great Britain the plant erected by Imperial Chemical Industries Ltd. at Billingham produced during 1937 over 120,000 tons of petrol The coal used for all purposes was 440,000 tons, of which that directly hydrogenated amounted to 110,000 tons. Large quantities of creosote and low-temperature tar have also been hydrogenated in this plant.

Plants have also been erected in France, Italy, and Japan for hydrogenation of coal and tar, using modifications of the Bergius process.

Commercial Developments of the Synthetic Process. The commercial rights of the Fischer-Tropsch process are owned by the Ruhrchemie A.G., and four large-scale plants are in operation in the Ruhr and Saxony. These are being extended and others built. It is expected that 700,000 tons of synthetic products will be produced annually by 1939.

In France a plant has been built by Etablissements Kuhlmann for a production of 10,000 tons of liquid products annually, and in Japan a Fischer-Tropsch plant has been put into operation with an output of about 40,000 tons per annum. Modifications of the synthetic process are under development in Great Britain Up to the present synthetic production of lubricating oils has only been found possible from the synthetic process owing to the nature of the oils produced, which are of a paraffinic type as against an aromatic type in the hydrogenation process. Some lubricating oils are being made in this way in Germany, but the quantity is not known. (C. H. L.)

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SYNTHETIC PRODUCTS. For information on this subject, *see* the following articles: CELLULOSE AND CELLULOSE PRODUCTS; CHEMISTRY, APPLIED; INDUSTRIAL RESEARCH; PLASTICS INDUSTRY; RAYON; RUBBER AND RUBBER MANUFACTURE; SILK AND SILK MANUFACTURE; TEXTILE INDUSTRIES.

SYPHILIS: *see* VENEREAL DISEASES.

SYRIA AND LEBANON. Throughout 1938 the government of Damascus found its unifying policy opposed by the nationalities who were anxious to preserve their privileges and autonomy. Demonstrations on April 16 in the Jezireh compelled the police to fire on the crowd.

The non-ratification of the Franco-Syrian treaty of 1936 and France's solution of the Alexandretta problem lent force to the opposition directed by Dr. Chabbandar, a partisan of total independence, which was carried on in the first place from Egypt and finally from Damascus. The idea spread that a holy war—a *jehad*—would be necessary in order to obtain a realization of France's promises, and this resulted in the accumulation of secret armaments, and in proposals for a *rapprochement* with Turkey.

Jemil Mardan Bey replied in February by sanctions against the partisans of Dr. Chabbandar, the reorganization of the "Green Shirt" youth movement, action against the Press, and propaganda tours in August among the principal towns of the republic. But on May 31 the Premier was forced to make a guarded declaration that the Syrian parliament would not vote the ratification of the annexed agreements until the French parliament had adopted the treaty. The proposal to increase taxes from fifty to sixty per cent roused such protests that the government was compelled to withdraw it

It was in an atmosphere of faint hope and strong mistrust that Jemil Mardan Bey went to Paris in August to continue negotiations Declarations made by the Foreign Minister, M. Bonnet, gave ground for hoping for a speedy ratification of the treaty by the French parliament, but the whole question was placed in doubt again by the statements made on Dec. 14 by the two rapporteurs of the Foreign Affairs Committee of the Senate, who expressed their hostility to the treaty of 1936 and to the protocol and the joint declaration of 1938, which they reproached with instituting a centralizing regime to the detriment of the Alawite states, the Jebel Druse, and especially the Jezireh. This hostility forced Jemil Mardan Bey to resign on his return to Syria, and greatly increased the difficulties of the new High Commissioner, M Puaux, who was appointed in place of M de Martel on Oct. 27 and took up his post at the beginning of 1939. Serious disturbances occurred, but the policy of the new Lufti Haflar cabinet is co-operation with the French authorities till the question of ratification of treaty is settled.

Lebanese opinion continues to be greatly disturbed by the economic crisis, due to the monetary depreciation and to the breakdown of the Lebano-Syrian customs union, and also by the fears inspired by the concessions granted to Turkey by France in the Hatay. Furthermore, the republic has experienced two ministerial crises in a year. The Khaireddine Ahdad cabinet, which came into office on Jan. 18, had to give place on March 21 to a Khaled Chehab ministry, which in its turn resigned on Oct. 27 and was replaced by a unionist cabinet under Abdallah Yafi.

(C. A. J.)

Area and Population:
Area 77,700 sq. miles.
Population (est. Dec. 31, 1936) 3,500,000 (Europeans, 28,000).
Chief Towns: Damascus (cap. of Syria, 225,000), Beirut (cap. of Lebanon, 180,000).
High Commissioner. M. Puaux.
Language. Arabic.
Religion. Mohammedan (Christian, 505,500).
Production 1937:

Wheat	468,400 metric tons
Barley	246,600 „ „
Oats	10,800 „ „
Maize	26,700 „ „
Potatoes	45,700 „ „
Cotton, ginned	5,700 „ „
Silk, raw (1936)	80,000 „ „
Olives („)	9,836 „ „
Raisins („)	180,117 „ „
Citrus Fruits (1936)	4,601,700 „ „

Overseas Trade 1936:

Imports	677,120,000 francs
Exports	347,300,000 „

Communications 1937:
Roads, main, 342 miles; total, 1,860 miles.
Railways . . . . . 415 miles
Finance 1938:

Syria: revenue and expenditure	204,940,940 francs
Lebanon: „ „ „	108,120,000 „

T

TABLE TENNIS. This game continues to make progress in Great Britain, the leagues, of which there are well over 200, now embrace some 75,000 players, and the time limit of 20 min, first imposed in 1938, coupled with the ¾-in. lowering of the net and certain other improvements have contributed to its popularity, especially by the curtailment of "rallies"

The two international team championships, the Swaythling (men) and the Corbillon (women) Cups, both held by the United States, again attracted a large "field", ten nations (Belgium, Holland, Ireland, Czechoslovakia, the United States, Wales, England, France, Austria, and Hungary) entering for the latter, and sixteen (Poland, Germany, Latvia, Egypt, Yugoslavia, and Lithuania in addition to these) for the Swaythling. The Swaythling was won by Hungary, who met the U.S A in the final, and the Corbillon Cup went to Czechoslovakia, who won all their nine games, England being second with eight wins.

The World Championships were held in London (at the Royal Albert Hall, the Memorial Hall, and the Empire Pool, Wembley) at the end of January. B. Vana, an eighteen-year-old Czechoslovak, beat R Bergmann (Austria), the holder, by three games to one in the final of the singles, and thus became world champion. The women's singles went to Miss T. Pritzi, of Austria, who defeated Miss Depetrisova, of Czechoslovakia. The men's doubles were won by the U.S A., the women's by Czechoslovakia, and the mixed by Miss W. Woodhead (England) and L. Bellak (Hungary), who beat the Czechoslovak holders, Miss C. Votrubcova and B. Vana.

At the annual meeting of the International Federation (Jan. 29) it was decided to hold the world championships for 1939 in Egypt, and for 1940 in either Hungary or Germany. The Hon. Ivor Montagu was re-elected president.



Sport & General]

TABLE TENNIS WORLD CHAMPIONSHIP TOURNAMENT IN PROGRESS AT THE ALBERT HALL, LONDON, JAN. 24, 1938

TABOUIS, GENEVIÈVE (1892–); French journalist and writer. Born in Paris on Feb. 23, daughter of a painter and grand-daughter of Le Quesne, the well-known French sculptor, she was educated at the Convent of the Assumption, finished her studies at the Sorbonne, and for ten years was engaged in Oriental research at the École d'Archéologie, Musée du Louvre. She began her newspaper work in 1924 as special correspondent of the *Petite Gironde* at the League of Nations, later joining the *Petit Marseillais* and *Excelsior*, and after 1932 writing on foreign policy for *L'Œuvre*. In 1926 she published her first book, *Le Pharaon Tout ank Kamon*, in 1930 *Nabuchodonosor*, and in 1934 *Salomon*; all have been translated into English and were awarded prizes by the Académie Française. In January 1938, Mme Tabouis published *Blackmail or War*, which has been translated into many languages, in March *Jules Cambon*, a biography of her uncle, ambassador in Berlin at the outbreak of the World War, and in October *Perfide Albion—Entente Cordiale*; she also contributed to *Europe into the Abyss*, an international symposium by various writers, published in April. During 1938 she visited Geneva, London, Prague, and Belgium as a journalist and gave a number of lectures on international affairs both abroad and in France, she contributes to various English periodicals and to *La Critica* of Buenos Aires.

Mme Tabouis was married in 1916; her husband is a nephew of General Tabouis and director of the French Broadcasting Companies, there are one son and one daughter.

TAHITI: *see* PACIFIC ISLANDS, FRENCH.

TAJIK S.S.R. In June 1938, at the elections of the Supreme Council of the Soviet Union Republic of Tajikistan, 282 candidates of the communist and non-party *bloc*, among them 84 women, were elected. As in all the other Union Republics, more than 99 per cent of the population are said to have taken part in the elections. The first session of the Council took place in the middle of July in Stalinabad. The government of the Republic was given a vote of confidence by the Council. In the three-day debate, nevertheless, the work of many individual Commissariats (for Trade, Agriculture, Education, Justice, etc.) was criticized by a number of the deputies.

Area and Population:

Area 55,598 sq. miles.

Population (1933) 1,333,000 (rural 1,187,000, urban 146,000. Tajiks 78·4 per cent, Uzbeks 17·9 per cent); yearly increase 3·4 per cent; total workers (1937) 78,500.

Leading Cities (1936 populations): Stalinabad (the capital) (49,600), Leninabad (67,700).

Languages: Tajik, Uzbek, Kirghiz.

Economic Life 1937:

Peasant households collectivized, 165,813; machine and tractor stations, 46, with 3,420 tractors; sown area, 1,944,647 acres (252,240 acres cotton plantations); 851,507 acres irrigated 1926–37.

Retail trade turnover	724·2 million roubles
Invested in industry (1934–37)	114,238,000 roubles
Output of oil	25,000 tons
Total power capacity	17,550 kwh
Telephone and telegram cables	1,451 miles

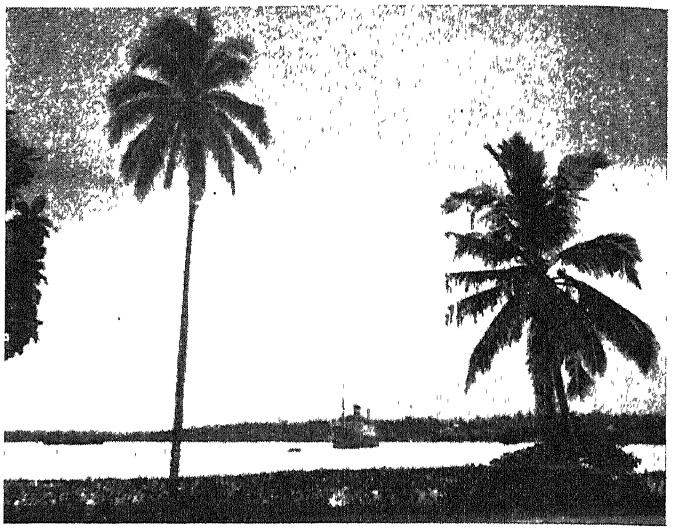
Budget 1938 : 449 million roubles.
Cultural Life 1937 : Education : expenditure 181·1 million roubles ; elementary and secondary schools, 3,853 (203,209 pupils).
Newspapers, 58 ; periodicals, 5 ; physicians, 322.
(S. YAK.)

TALBOT, SIR GEORGE (JOHN), British judge, was born in London on June, 19, 1861, and died at Edenbridge, Kent, on July 11, 1938. He was educated at Winchester and Christ Church, Oxford, and was called to the bar by the Inner Temple in 1887 He became a K C. in 1906, and played a prominent part in several notable ecclesiastical cases. As chancellor of the diocese of Lincoln, he presided at the trial in 1921 of Archdeacon Wakeford for immoral conduct. He was also chancellor of the dioceses of Ely, Lichfield, Rochester, Southwark, and Winchester. From 1923 until his retirement in 1937 he was a judge of the King's Bench Division, and among his better-known trials was that in 1931 of Alfred Rouse in the " Burning Car " case. Talbot was knighted in 1924, and in 1937 was sworn a member of the Privy Council. He published *Modern Decisions on Ritual*, 1894 ; and *The Law and Practice of Licensing*, 1896 and 1905.

TAMMANY HALL. In Nov. 1937, Tammany Hall suffered a severe defeat at the polls. The Fusionist mayor, Fiorello H. La Guardia, was decisively re-elected ; and Thomas E. Dewey, special prosecutor of racketeers, defeated Tammany's district attorney for the strategic New York county, William C. Dodge. The sequel during 1938 was sensational. A charge of harbouring a fugitive from justice was brought against Albert Marinelli, a Tammany leader and New York county clerk, who was ultimately acquitted. In May, James J. Hines, prominent Tammany leader, was arrested on a charge of arranging immunity for a gambling racket. The trial of Hines in August aroused great interest, and came to a dramatic conclusion : while cross-examining a witness, District Attorney Dewey alluded to testimony about Hines and a poultry racket, alleged to have been given in another case before a grand jury. Counsel for Hines immediately claimed a mis-trial on the ground that the reference was calculated to prejudice the jury. On Sept. 12, Justice Ferdinand Pecora, by a warmly discussed decision, announced a mis-trial, and District Attorney Dewey intimated that a new trial would be undertaken.

During 1938 criticism of law enforcement in Kings county again became acute, and in October Governor Lehman suspended the district attorney, into the affairs of whose office an investigation was undertaken. During October an intruder into Bergen street police-station cut out and removed the records of about 7,000 cases in which bail bond may have been an element. A police officer was arrested. In the meantime Dewey, who had been elected district attorney for a four-year term, was nominated in the Republican primaries as candidate for governor and he made Tammany a major issue.

TANGANYIKA. The opportunities provided for local self-government by the system of indirect rule have been widely taken advantage of by the native people. Schools, markets, dispensaries, and other social services are financed from the tribal treasuries, and the co-operation of the native authorities and people has been secured in measures for the control of tsetse-fly and for the promotion of peasant farming. There has been discontent among the coffee-growing tribes owing to misunderstandings regarding the government attempt to improve the conditions of plantations. During 1938 the death of Dr. Swynnerton was a severe loss to the tsetse research department. The Report of a committee on the supply and welfare of labour (1936–37) revealed unsatisfactory labour conditions on the Lupa gold-fields : it made clear that the labour supply would be ample if given proper treatment and if used more economically. The labour department has been strengthened and measures have been taken to improve health conditions. The introduction of income-tax for Europeans has again been deferred. Anxiety regarding the territory's future contributed towards a set-back in economic progress, and a deficit of over £150,000 is anticipated both for this reason and owing to a fall in commodity prices. A Tanganyika league has been organized to demand the retention of the territory within the British Empire, and has received support in Kenya and elsewhere. During 1938 the National-Socialist movement has been active among the Germans, who number about one-third of the European population. Assistance from the Colonial Development Fund has enabled a survey of the water resources of the territory to be undertaken. (J. L. K.)



R. Kingston Davies]
TANGANYIKA TERRITORY THE HARBOUR, DAR-ES-SALAAM

Area and Population :
Area *c.* 360,000 sq. miles.
Population (est. Dec. 31, 1936) 5,188,067 (Whites 9,107).
Chief Towns : Dar-es-Salaam (cap.), Tanga.
Governor. Sir Mark A. Young, K.C.M.G.
Production 1937 : (E. = export figure)

Coffee (E.)	13,800	metric tons
Cotton	11,700	,, ,,
Sesamun (E.)	4,700	,, ,,



R. Kingston Davies]
TANGANYIKA TERRITORY. MT. KILIMANJARO IN THE EVENING

Copra	7,600 metric tons
Ground nuts (E.)	32,300 ,, ,,
Gold	2,350 kilograms
Diamonds	3,230 carats
Cattle, number	5,035,088
Sheep, number	1,645,663

Overseas Trade 1937 :
Imports, total £4,201,025 (bullion and specie £276,930)
Exports ,, £4,969,452

Communications 1937 :
Roads, main (chiefly earth surfaced) 2,777 miles
Railways, open to traffic 1,377 ,,
Shipping : net tonnage entered, 3,225,218 , cleared, 3,228,267

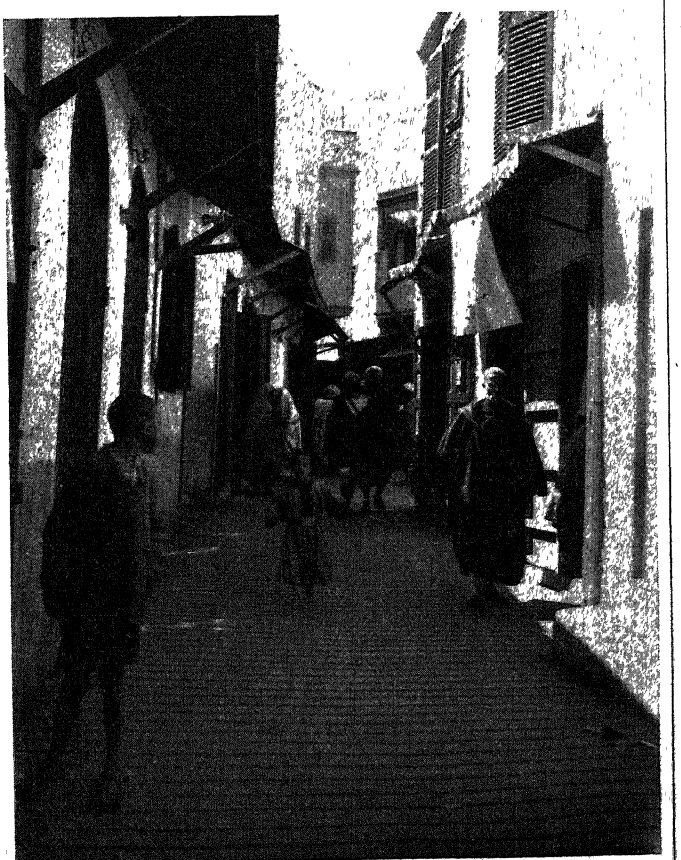
Finance and Banking :
Revenue . (1937) £2,203,435 , (est. 1938) £2,216,580
Expenditure : (1937) £2,178,187 , (est. 1938) £2,201,127
Public Debt (Dec 31, 1937) £8,713,566
Notes in circulation (Dec. 31, 1937) (total circulation, including Kenya and Uganda) £39,998,570
Currency : East African shilling . 1 sh. = 100 cents

Education 1937 :

European :	elementary schools,	18 ,	scholars,	834
Indian :	,,	,,	60 ;	,,	4,623
African :	,,	,,	2,203 ;	,,	129,500

TANGIER. An international territory, Tangier is one of the zones of Morocco, its legislative power being vested in an international assembly. The regime is autonomous, the Sultan of Morocco being the nominal ruler and France the paramount Power. The representative of the Sultan in Tangier is the Mendoub, Sidi Mehemed Et-Tazi.

Area and Population :
Area 225 sq. miles.
Population (est. Dec. 31, 1936) 80,000.
Chief Town (cap.) Tangier (pop. 45,000).
Administrator. M. Le Fur.
Languages, official. French, Spanish, and Arabic.
Religion. Mainly Mohammedan.



Elaine Bickerstaffe

A STREET IN TANGIER

Trade, external (1937) :
Imports 80,084,240 francs : Exports 8,247,103 francs.
Finance (ordinary, est. 1937) :
Revenue 19,927,500 francs : Expenditure 25,082,800.

TANG SHAO-YI, Chinese statesman, was born in Tongkawan in Kwantung in 1860, and died in Shanghai on Sept. 30, 1938. A brief biographical notice may be found in the *Ency. Brit*, vol. 21, p. 786. After having served as minister of finance in the Canton government in 1922, Tang held office in 1928 as magistrate of Kwantung. In 1932 he was elected to the Central Supervisory Committee of the Kuomintang and was appointed a State Councillor of the National government. He is believed to have declined all offers of office in one of the provisional administrations set up in territory occupied by the Japanese. On Sept. 30 he was attacked with hatchets by Chinese assassins, and died as a result of his wounds.

TARIFFS. The year 1938, which saw a continuance of the trade recession that had begun in the previous year, would have been predominantly a period of increases of tariffs, but for the effect of certain important international trade agreements. These provided for reciprocal reductions of duties on goods in which the several parties were specially interested, these advantages being automatically passed on to third countries enjoying most-favoured-nation treatment (*see* TRADE AGREEMENTS) Much the most important of these agreements was the pact between the United Kingdom and the United States, under which the former's duties were removed or reduced on wheat, motor-cars, and a wide range of foodstuffs, raw materials, and manufactures imported in large quantity from the United States, while the latter reduced her import duties on textiles and other manufactures exported by the United Kingdom. Both countries also entered into engagements with regard to the retention of certain commodities on the free list or under maximum rates of duty. With this agreement was associated a pact between the United States and Canada under which reciprocal tariff concessions were granted by both parties.

Canada also abolished, in August, the currency dumping duty on New Zealand butter, in accordance with a trade agreement reached with the latter Dominion earlier in the year. In March, New Zealand, for her part, had confirmed or extended the grant of reduced rates of duty, not only to Canada, but also to Australia and South Africa, in accordance with fresh trade pacts with them. She also lowered duties on a number of manufactured products under a trade pact with Switzerland, these concessions being granted automatically to all other countries enjoying most-favoured-nation rights. Another agreement of great importance within the British Commonwealth was that signed by the United Kingdom and Eire in April. Under this, the discriminatory duties which had been levied, by the United Kingdom in order to make good the suspended land-annuities, and by the Irish Free State (now known as Eire) in retaliation, were abolished, and Eire was placed, generally speaking, on the same preferential footing as other parts of the British Commonwealth in the United Kingdom market. These concessions were not extensible to third parties.

More important, therefore, for the world at large was the reciprocal trade agreement signed by the United States and Czechoslovakia, though its direct effect was afterwards much restricted by the German occupation of Sudetenland, since this placed that area under the same regime of tariffs and import-restrictions as the old Reich. The occupation of Austria had a like consequence. Under the agreement,

Czechoslovakia's duties on fruits, motor-cars, typewriters, refrigerators, etc., were lowered in April, while the United States also reduced her duties on a series of manufactured products, notably glassware. Among other international agreements responsible for lowering tariffs under most-favoured-nation clauses were those between Rumania and Turkey, involving lower Rumanian duties on certain fish, nuts, and fruit (March), between Rumania and Italy, involving a lower Rumanian duty on olive oil (August); and between Poland and Germany, involving lower Polish duties on woollen hosiery, carpets, copper pipes, domestic electrical appliances, etc. (August).

The countries concerned in these agreements all practised control of imports by exchange restrictions, quotas, and other limitations These non-tariff restraints, together with payments agreements, barter and clearing pacts, continued to be even more important than tariffs, at least in central and eastern Europe, in determining the channels of international trade. The tendency, indeed, was for them to increase. Rumania, for instance, restored to the quota list those products which had been removed from it in 1932. The most notable example of an extension of the system was the imposition of general import control in New Zealand on Dec 5.

Earlier, in March, New Zealand had been responsible for a series of important increases of protective duties, first on footwear (including both preferential and general rates), and shortly afterwards on many classes of apparel, woollens, leather, fancy goods, paper, machinery, paints, rubber manufactures, etc. (general and intermediate preferential rates). Australia made a number of important tariff changes, notably increases in the general rates of duty on certain machinery and parts (May), the imposition of sliding-scale duties on newsprint (November), decreases of preferential and general rates on knitted piecegoods, apparel, sheet glass, certain paper products, and many other articles (December), and increases on buttons, copper wire, and a further list (December). In the rest of the British Empire, mention may be made particularly of the following: a scaling down of the Newfoundland tariff on certain foodstuffs and clothing, galvanized iron, etc., in January; a lowering of duties, especially preferential rates, on a wide range of articles under the Southern Rhodesian budget of April; a lowering of the Indian duties on wood pulp and paper (June); and substantial increases in the revenue tariff of Jamaica on alcoholic liquors and matches (August). Apart from the changes consequential on the agreements with the United States and Eire, there were minor variations in the United Kingdom's protective tariff under the Key Industries and Import Duties Acts. The specially reduced rates on certain iron and steel products lapsed in April, and in the same month the budget increased the tea duty by 2*d.* a lb.

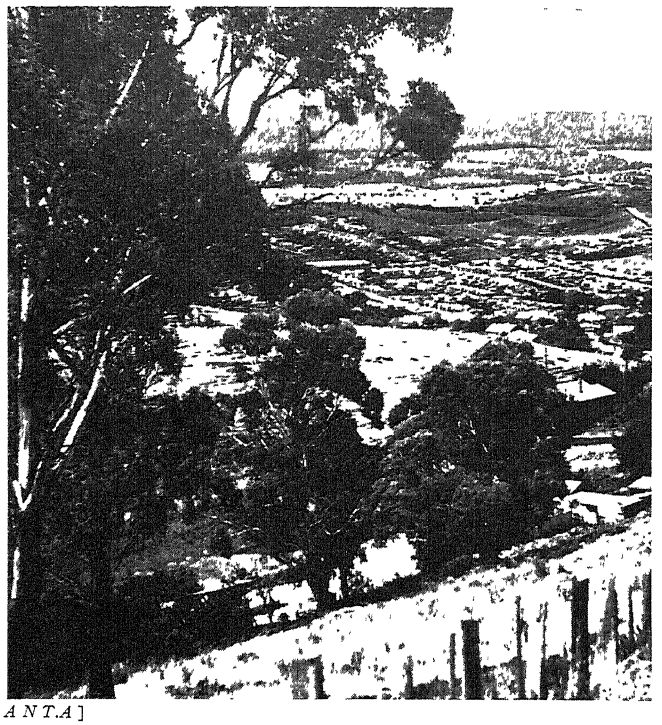
Among the countries raising their tariffs all round, France was the most prominent. The fall in the exchange value of the franc, combined with her fiscal difficulties, obliged her to adopt a series of increases. These affected particularly the following products: mineral oil (January), certain cutlery and ironware and manufactures of lead and copper (January), toys (January), sea fish, citrus fruits, bulbs and flowers (January), animal and vegetable oils and fats, and printing inks, linoleum, woollen goods, hosiery, motor-cycles and many other articles (February), mineral oil again (June), cocoa and other tropical products (June), vegetable oils, tiles, woollen hosiery, etc. (August), petroleum (November), and oils and fats (December). Many of these tariff increases were decreed under the laws of April 13 and Oct. 5 for the financial rehabilitation of the country These measures also called for many increases of consumption taxes affecting domestic as well as imported products.

Belgium subjected her tariff to a series of modifications in 1938, but these included many reductions as well as increases The chief increases were on footwear, soap, and porcelain. Switzerland, while reducing duties on tobacco (January), increased them on cattle fodder, straw, seed potatoes, and certain other articles (January, June, and August), edible oils and fats (June), wheat and rye (August), sugar, beer, malt, and barley (November). Italy lowered her tariff on petroleum (February), but raised it on wheat, maize, and flour (April), and on woollen hosiery and gloves (August). Turkey, while also practising the quota system, embarked on a wide and important series of tariff reductions, involving, first, a list of raw metals, jute, rubber, chemicals, and many other raw materials (July), and then a large number of manufactures and semi-manufactures, including tools, steam engines, electric and petrol motors, and other classes of machinery (August). Among the Scandinavian countries, in July and August Norway raised the duties on cheese, clothing and certain other textiles, certain metal products, glassware, etc. Finland raised some duties, and there were secondary variations in the Swedish tariff. One significant change was a series of temporary reductions on foodstuffs entering Government Spain (May).

Outside Europe, Mexico was prominent with a sequence of tariff changes, some of them involving substantial increases. These mostly took place in January and affected a wide range of goods, ranging from crude rubber to radio sets, from pills to motor-cars, and including silks and rayons. In August, however, Mexico lowered duties on tanned hides, tea, rayon yarns and tissues, furniture, certain iron and steel products, chemicals, alcoholic beverages, tools, etc. Ecuador imposed a wide range of tariff increases (March), and under an Exchange of Notes with the United States Nicaragua removed a number of former special concessions.

In the Near East, there were changes in the Palestine tariff, notably increases in the duties on kerosene, motor spirit, and matches (April). Egypt imposed big increases on cotton goods (April), and smaller increases on sugar, confectionery, electric lamps, etc. (July), with some reductions also. The Far East produced two main events in the sphere of tariffs: reductions on a wide range of goods entering North China, including cotton goods, foodstuffs, iron and steel sheets, and many other articles (January); and the promulgation, in June, of a new customs tariff for the ports of Tientsin and Shanghai and other parts of the area of China controlled by Japan. (H. V. H.)

TASMANIA. Some important legislation was passed by the state parliament in 1937–38. It included an authorization to subscribe £250,000 towards the new paper industry, producing newsprint from eucalyptus gum; and a revision of the licensing laws, altering the permitted hours from 6 a.m. until 6 p.m. to 10 a.m. until 10 p.m. An experimental five-day week for shops was introduced in Hobart. The scheme of free medical service for remote country districts was further developed. Government plans were published for the co-ordination of different branches of transport, on which half the public debt of the state had been spent. The Tasmanian Labour party unanimously adopted the proposal of Mr. A. G. Ogilvie, the premier, to restore compulsory military training for home defence. The Tarraleah



A N T.A]

A SECTION OF LAUNCESTON, FROM THE GORGE HILL

hydro-electric power works were opened by the governor-general on Feb. 25, 1938, and a further important development was the opening of the first mills making newsprint from eucalyptus gum. In Feb 1938 the Royal Hobart Regatta Association held its centenary regatta, the competition being international. The building boom in Hobart continued in 1938, and general economic conditions were sound. There was a very good apple crop, and an excellent lambing season. (H. V. H.)

Area and Population :
Area 26,215 sq. miles.
Population (est. June 30, 1937) 232,286.
Chief Towns: Hobart (cap.) (60,406), Launceston (30,000)
Governor. Sir Ernest Clark, K.C B., K.C.M.G
Production 1935–36 :
Primary, £5,680,990 ; Secondary, £4,066,860.
Labour 1937–38 average :
Factory Employment (1928–29 = 100) 124.
Unemployment (Trade Union returns) . 10 per cent.
Communications Dec. 31, 1937 :
Roads, surfaced 21,000
Railways : government, 663 miles ; private, 131 miles.
Finance :
Revenue (1937–38), £3,640,000 ; Expenditure, £3,633,000
Public Debt (June 30, 1937) . . . £25,247,540
Miscellaneous :
Motor vehicles licensed (1936–37) : cars, 15,090 ; lorries, 4,011 ; cycles, 3,573.
Wireless receiving-set licences (Dec. 31, 1937) 37,781
Telephones, subscribers (1936–37) . . . 12,895

TAXATION. The chief characteristics of recent developments are (*a*) the process of " steepening " the progression in taxes on wealth and income ; (*b*) the use of taxation as a means of achieving other social or governmental ends than revenue ; and (*c*) the development of taxes on sales or turnover.

Progression in taxation achieved by the higher percentages charged upon the wealthier people is no longer based in principle merely upon the idea of " equal " sacrifice, but is advocated widely as a means of redistributing wealth. Out of the fund so provided by the rich, the social services and pensions of the poorer members of the community are financed. It is urged that it is better, under an individualist system of society, not to try to fetter the making of profits and the personal initiative, but to allow the fortunes to be made and then to take high toll of them for social purposes In consequence, at the highest ranges or " brackets ", rates of sixty per cent or more are accepted as reasonable, and an average rate over the whole approaching fifty per cent is not uncommon. Nor are people any longer greatly shocked to see that when " death duties " are reduced to an annual equivalent, the total annual taxes for a wealthy man may exceed 100 per cent, inasmuch as the keeping of individual capital intact in large blocks is no longer thought a sacred duty. Moreover, the social value of excessive saving by the rich is called into question in many fields of economic analysis. A general consequence of the high rates is the development of ingenious methods of legal avoidance—by establishing private corporations or companies (especially abroad) which receive and accumulate the income, and by various types of trusts—and the continual struggle of the legislative side to circumvent and discourage these devices.

Accompanying the sharper progression at one end of the scale we have a spread of devices at the lower end to make direct taxes reflect more exactly the personal status of the taxpayer in the compulsory use to which he has to put his income, *e g* allowances for children, for housekeepers, for dependent relatives, for sickness, and the like. In most advanced countries the income taxes are approximating to a greater similarity than formerly, although there are still wide disparities. The difference between the treatment of " capital " profits or gains in the United States compared with British and European systems is a striking instance.

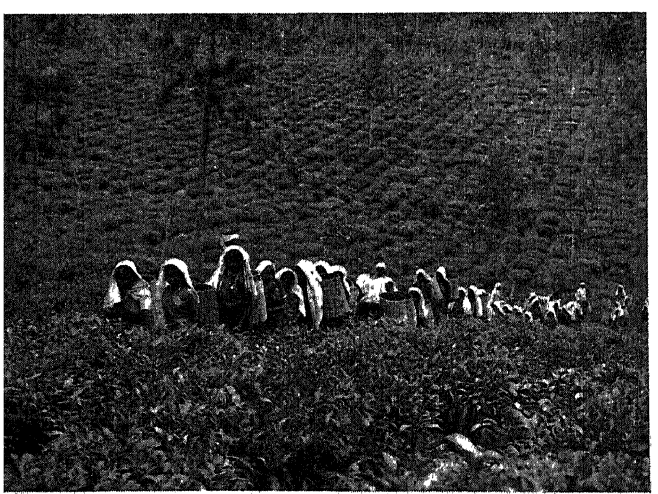
The developments indicated have now led into a widespread view that taxation expedients are rightly used to promote non-fiscal objects. For long the only field in which this was prevalent was that of protection of particular industries by customs duties, and now that Britain, since 1931, has given up taxation for revenue only, the arrangement of tariffs to develop certain economic ideas is general. But tariffs have also developed widely as defences against a non-industrial competition—the competition of depreciated currencies. When a currency in country A has been " devalued ", it has to give in exchange more units for a given currency unit in country B which has not altered its currency. An exporter from A to B gets the same price in B's currency as before, but this exchanges for more units of his own, and if he has not to pay in rent, interest, and wages a fully *increased* number of his own units, he has a greater margin of profit in his own units. This enables him to reduce prices in B, and become a formidable competitor—at any rate for a time. To ward B off, A then increases the tariffs on B's goods. These defensive tariffs in one form or another have multiplied greatly. Special taxes on income going abroad are designed to achieve ulterior objects, such as discouraging investment by foreigners in the home securities; the ten per cent recently applied in the United States is an example. A tax on undistributed profits of corporations is intended to prevent hoarding by companies, which is regarded as deflationary, and to push purchasing power into the hands of the stockholders, so that their spendable incomes will be increased. This is the use of taxation as means to achieve special economic ends. As a rule they have unexpected repercussions and are clumsy means to the end desired. The undistributed profits tax in America has been profoundly

modified, because it seriously starved particular vital investment agencies, and so reacted on "capital" industries. Perhaps the most thoroughgoing use of taxes to promote social objects or hinder social tendencies has been elaborated in Germany. The object of the legislation has been "to reorganize taxes to make them fit the policy of National Socialism, with reference to population, social welfare, economics, and National Socialist philosophy" As a consequence there are taxes on bachelors and spinsters to discourage celibacy and provide funds for marriage loans, new capital equipment in businesses at particular dates is favourably treated, motor-cars purchased at particular times are differentially treated; employment of girls is encouraged; the taxation of partnerships is reduced and that of companies increased to stimulate personal responsibility

The growth of taxes on sales has been remarkable, and there is no instance in the whole history of taxation of such a rapid development In a few years over thirty nations had adopted them, and in the United States between 1929 and 1934 the spread was rapid In France many commodities have been specially excepted, to be subject to special taxes, and in general the tax requires no exact figures or evidence—it is based on estimates, with outward signs. It causes wide changes in business methods and tends to favour large integrated companies. In the United States, probably the decline of the personal income tax in the depression of 1931–35, with the necessity to maintain and even increase revenues, was an important reason for the spread, and the reduced valuations for the State property taxes were another cause. In North Carolina, for example, the policy for schools seems to have been closely related to the sales tax. The experiments in the different States are widely different. Great Britain has not adopted it, because it is "regressive" on the poorer classes, but it is found in the majority of modern States, and when once it has been adopted it is often modified but rarely abolished. (S.)

TEA. From April 1, 1938, the International Tea Agreement started on its second five-year period of operation with only minor alterations For the first year the percentage of regulation was fixed at 92½ This percentage is higher than that fixed for any year during the first five-year period when exports from India, Ceylon, and the Netherlands East Indies were regulated at between 82½ and 87½ per cent of their standard exports.

Following the rise in export quotas, shipments from India increased in 1938 by 9 million lb. to some 340 million lb., whilst those of Ceylon rose by 21 million to 235 million lb. and those of the Netherlands East Indies by 11 million to 158 million lb. Of the principal non-signatory countries, China considerably increased its shipments, but Japanese exports declined and those of Formosa showed little change.



Empire Tea Marketing Expansion Bureau

ON A TEA PLANTATION IN CEYLON

Imports into the United Kingdom in 1938, totalling nearly 527 million lb., were larger than in any year since 1932, but re-exports further declined The quantity retained for home consumption fell by some 3 million lb compared with 1937 to the figure of 432 million lb. Absorption in the United States also declined slightly as compared with the previous year. Of the other chief importing countries, Australia and the Netherlands showed small increases in 1938, whilst declines were recorded by Canada, Eire, and probably Russia.

United Kingdom bonded stocks, which had fallen to 131 million lb. in July 1937, increased thereafter to 228 million lb. in Jan. 1938. A decline to 162 million lb. in May was followed by a rise to 243 million lb. at the year end. Stocks of Netherlands Indian tea in Amsterdam fell below 3 million lb. in Oct. 1938, the lowest figure for many years.

Prices in 1938 were fairly steady, but, apart from seasonal movements, showed a downward tendency. The average price of tea sold by public auction in London during the first weeks of 1938 was higher than in the corresponding weeks of 1937. From the end of February prices were generally about 1*d.* a lb. lower than in the corresponding 1937 sales. The average price realized for all tea auctioned in London was 14·39*d.* lb. in 1938 as compared with 15·18*d.* in 1937. (J. L. C.)

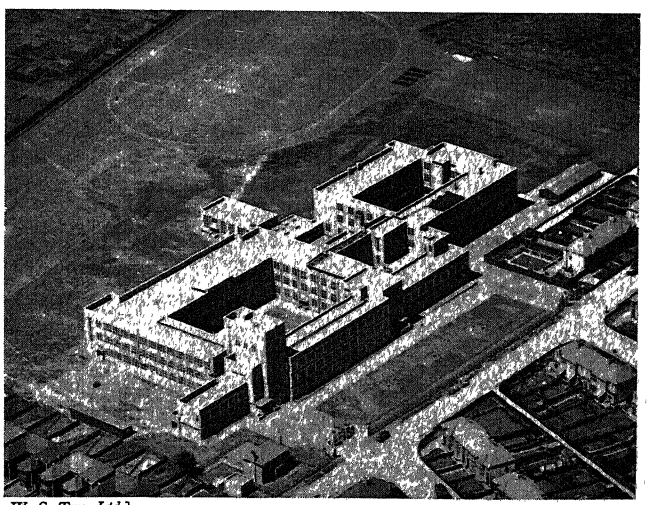
TEACHERS, CERTIFICATION OF. Throughout the world the recognition of licensing or certification of teachers in public elementary schools, and often in secondary schools, and even in national universities is a prerogative of the State exercised through its Board of Education or Ministry of Public Instruction. Generally speaking, recognized or certificated teachers in State primary schools must be not ecclesiastical but lay, although nuns and priests may teach in approved denominational schools. In England a clerk in Holy Orders may teach in an L.E.A. secondary school, in a public school, or a university, but not in a public elementary school.

From 1870 to 1928 the certification of teachers in elementary schools was not the only prerogative of the State, for the machinery of examination and the syllabuses thereof were also State controlled. In 1928, however, following an important pronouncement by Lord Eustace Percy, then Minister of Education and now Rector of King's College, Newcastle-on-Tyne, the English Board of Education relinquished practically the whole of its examination powers and enlisted the co-operation of the universities, the training colleges, and the local education authorities in the establishment of autonomous regional bodies, known variously as joint boards or delegacies. These joint boards, unlike the university faculties or departments of education, do not limit themselves to the professional training of teachers, but apply also to their academic qualifications. Hence, while a university diploma in education is open only to graduate teachers, the examinations of the joint boards are open both to graduates and to non-graduate trainees: the latter naturally preponderating. To secure reasonable uniformity in the standards adopted by the regional delegacies, the Board of Education further established a Central Advisory Committee on the Certification of Teachers. This body

periodically reviews and reports to the Board upon the general character of the pass lists issued by the regional joint boards or delegacies But the Board of Education, in initiating this great change in 1928, made certain important reservations. It reserved the control of the mark for practical teaching, and it reserved until further notice its powers to inspect and assess semi-professional subjects such as craftwork, needlework, and physical training, which were deemed to be inconvenient for university oversight A very important consequence follows, essential to the proper understanding of the present position with regard to the certification of teachers in England and Wales The fact that a teacher in training or an ex-student sitting for re-examination passes the examinations of a regional joint board does not of itself confer upon that teacher the rank of certification and admissibility to the provisions of the Teachers' Superannuation Act One step further is essential Upon receipt of the pass lists, and provided the Board of Education is otherwise satisfied (Form 20 T.C.) as to the suitability of the teacher, he or she receives a letter of recognition from the Board giving him an official number henceforth to be quoted in the Teachers' Service Book, upon the record in which his future superannuation will be calculated. It is this letter of recognition which alone is the legal teachers' certificate in England and Wales Graduates who have been recognized students in university training departments may also obtain this letter, but not private non-recognized graduates. The letter of recognition certificates the teacher for service in any approved school, but is no guarantee of employment. (A. A. C.)

TECHNICAL EDUCATION. Under this head are considered aspects of technical education in the major English-speaking countries of the world

England and Wales. Efforts were made in 1938 to improve the standard of technical training in order that greater advantage might be taken of the potentialities that mechanical progress had placed at the disposal of Great Britain. Mr Harold B. Butler, Warden-elect of Nuffield College, Oxford, urged the carrying of technical training to a higher point, and expressed the hope that the new college at Oxford, when it was completed, would create an effective contact between practical business and theoretical economic thinking, and thus produce a sounder knowledge of economic forces and methods of dealing with them. Mr. H. G. Wells advocated the production of a still more systematic summarization of the accumulated knowledge and technical



W. S. Try, Ltd.]
TWICKENHAM TECHNICAL COLLEGE AND SCHOOL OF ART, OPENED 1938

experience of mankind Mr Kenneth Lindsay, parliamentary secretary to the Board of Education, asserted that technical institutions must be brought up to date, and the best teachers and plant obtained. Three things, he said, were above all necessary to-day more junior technical schools, more day-time release of young employees to attend technical institutes, and better plant and equipment in the colleges.

The memorandum of the Association of Chambers of Commerce on the training of artisans in Great Britain and on the continent of Europe made a profound impression on employers, who have become convinced that technical education is a most powerful instrument for maintaining and increasing the efficiency of industry

An increase in the number of both full-time and part-time students was recorded in the report of the Board of Education (1938) The total number of full-time students, other than those in attendance at art schools, rose to 40,016 in the session 1936–37, as compared with 38,172 in 1935–36; and the total number of part-time students was 1,144,380, an increase of 99,422 over that of the previous year.

The organization of technical and commercial education was still mainly on a part-time basis, and training was pursued in conjunction with employment, whereas in Germany and France technical training took place in the period before employment, or took the form of part-time day training after entry on employment. In England and Wales the young workers seek opportunities of improving their qualifications and enhancing their prospects; and training has not been developed as a result of the direct demand of employers in the interests of industry and commerce. Employers realized, however, that technical and commercial schools could solve their problems of training, and that the growth of mechanization had not diminished the need for skill and resourcefulness. During the year 1936–37, 36,225 students were released by employers to attend appropriate courses during working hours. New classes for employees in connexion with the engineering industry were established at Colchester, Dagenham, Darlington, Hartlepool, Stockton-on-Tees, Stoke-on-Trent, and Willesden.

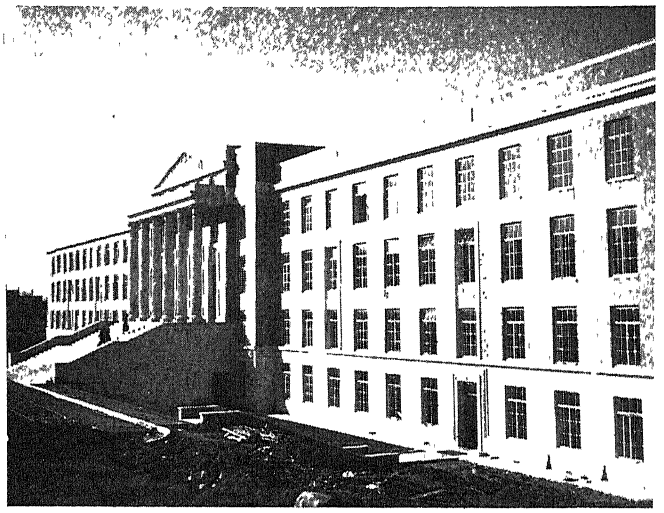
Progress during 1937–38 in the provision of new accommodation was not so marked as in 1936–37, but proposals for a total capital expenditure to the value of nearly £840,000 reached the stage of final approval.

Scotland. The total number of students attending continuation classes in the year 1936–37 rose to 152,018, and in classes under the Adult Education (Scotland) Regulations to 7,058.

Northern Ireland. The question of providing a suitable supply of technical teachers became acute, and promising students were encouraged to follow courses of instruction enabling them to profit from higher education.

Eire. A new technical school was opened in Galway, and it was proposed to make provision therein for students whose everyday language was Gaelic and to promote the study and use of the Irish language.

British Defence and Police Forces. Instruction at the Royal Naval Engineering College developed to meet the requirements of modern turbine installation, and new workshop models were introduced for purposes of demonstration. The intensive mechanization of the Army led to a demand for a high degree of mechanical knowledge among the personnel, and a thorough and specialized technical training was given at the Military College of Science, Woolwich, and at the Driving School, Feltham. A War Office exhibition at the Science Museum, S. Ken-



Topical Press]
SOUTH-WEST ESSEX TECHNICAL COLLEGE AND SCHOOL OF ART, AT WALTHAMSTOW, OPENED FOR USE 1938

sington, was opened to the public in Nov. 1938. The Royal Air Force School of Technical Training, the largest of its kind in the world, had some 4,000 boys under instruction during the year. A higher standard of efficiency in technical and practical instruction in the work of detectives was aimed at by the concentration of training at fewer centres, where full and comprehensive courses were organized. Overseas police officers greatly appreciated the facilities offered for training in the elements of scientific aids to detective work.

Australia. In New South Wales the total number of students attending technical classes in 1936–37 was 21,364. Classes for railway employees were conducted at the Railway Institute, Sydney. In Queensland stress was laid on the urgent need for the modernization of equipment. The report of S Australia emphasized the need for a more powerful public opinion in favour of further technical training. Good facilities were available in the smaller centres of population. A serious deficiency in accommodation in technical schools was reported from Victoria, while the report of Western Australia stated that the equipment was totally inadequate for requirements.

Canada. An increased appropriation by the federal parliament of nearly $3 millions permitted the broadening of the youth training scheme, whereby more than 50,000 young Canadians received beneficial technical training.

India. The popularity of institutions for professional and technical instruction was evidenced by the steadily increasing number of applicants for admission to courses. The public demand for technical education was vociferous, and was supported by articles in the press. Mr. Abbott urged in his report that technical and vocational schools now under the control of industries should be transferred to education departments.

New Zealand. The number of full-time students attending the technical schools rose to 9,408 in July 1937. Evening students numbered 13,430.

The Union of South Africa. As a result of Dr. F. H. Spencer's visit and report, technical colleges in the Union received more than ordinary attention in 1938, and at all institutions there were increases in enrolment and also waiting lists.

BIBLIOGRAPHY: *Education in 1937* (His Majesty's Stationery Office); *Pitman's Handbook of Commercial and Technical Education, 1939*; *The Year Book of Education, 1939*; Reports of the Education Departments of the States and Dominions of the British Overseas Empire; *Education in Industry, 1938*. (T. B.)

United States. Vocational education was stimulated in the United States during 1938 by largely increased Federal grants under the George-Deen Act. The advances in agricultural education include greatly increased enrolments, the development of programmes for out-of-school youth on farms, and the placing of work with part-time students on a full year basis. In the field of home-making education the gains include summer employment of teachers for home visiting, home-making courses for out-of-school youth, extension of home-making in the field of adult education, and the addition of new departments in secondary schools. In trade and industrial education the building programme noted in 1937 was kept on, with notable additions to the school plant in such cities as New York. Many smaller cities have built vocational industrial or technical high schools, and other cities are laying plans for extension of this work. Increasing attention is being given to "diversified occupational training", a sort of apprenticeship training applicable to small communities. Teacher training institutions are beginning to provide special training for teachers of this work. Increasing attention is being given to training for the foods trades.

The George-Deen Act has made possible relatively important increases in the staffs of teacher training institutions in all fields of vocational education, resulting in enlarged offerings of courses and increased facilities for research.

Occupational adjustment, including vocational guidance and placement, is receiving increased attention. The recent convention of the American Vocational Association featured this problem, and the United States Office of Education has added an occupational information service department. Local work centres and residence work experience projects, which provide opportunity for exploratory work in various occupations and the development of desirable work habits and elementary skills, have been started in substantial numbers, with enrolments numbering more than 200,000 young men and women.

TELEGRAPHY. The year 1938 witnessed a steady advance in the practical application of previously known principles, in the direction of greater speed and increased accuracy of telegraph service.

Facsimile Transmission, which during the years immediately preceding 1938 was given a new impetus by the successful application of a simplified method of pick-up and reproduction, was still further advanced by practical applications of the method, not only in trunk-line and short-line transmission, but between patrons' offices and the offices of telegraph companies.

Inductive Interference with grounded telegraph circuits, from electrified railways using alternating current, has been successfully overcome by the introduction of an electronic system of correction. One wire on an exposed pole line serves for a control, the voltage from which is fed into a transformer having a secondary coil in each line wire. Provision is made for the unimpeded flow of the telegraphic current.

Ocean Cable Service was improved by the continued application of vacuum-tube amplifiers, shaping networks to improve the quality of signals, and measuring and balancing devices. Direct connexion was established between New York and St. John's, Newfoundland, thus eliminating the relay of traffic at Halifax, Nova Scotia.

Reperforator Switching. The experience of recent years having indicated the practicability of relaying messages

between printing telegraph circuits by means of perforated tape rather than by manual relay, this method of intra-office switching became accepted practice. A new type of printer-perforator, which prints and perforates the incoming message upon a tape, has greatly facilitated reperforator switching.

Submarine Ploughing. The successful outcome of several years of experiment was demonstrated by burying in the ocean bed many miles of submarine cable in areas where it is subject to frequent and costly damage caused by the fouling of trawler equipment. This is accomplished by means of a submarine plough dragged along the ocean floor at the end of a specially constructed chain attached to the cable ship. The cable is fed through the plough into a trench, which rapidly fills, due to the washing action of the water. Ingenious measuring and recording devices keep those on the ship fully informed as to the functioning of the plough, which may be operating at a depth of half a mile below the surface of the sea.

Synchronous Operation of telegraph apparatus in offices and over large areas and the ability rapidly to interchange multiplex, carrier, and facsimile telegraph circuits, are primary requirements of present-day telegraph operation Where not assured by synchronous operation of power supply, these requirements are met by a master frequency drive, essentially an electrically operated tuning fork equipped with multiple output circuits which may be connected to the apparatus to be synchronized.

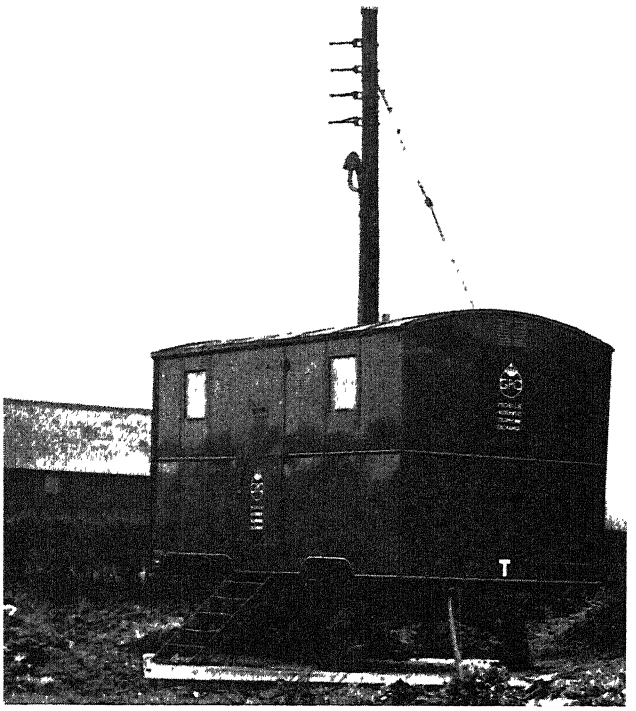
Telegraph Repeaters have been considerably improved, to permit the extension of the channels of a multiplex circuit over single wires to teleprinters or into other multiplex channels and by the development of simpler and less expensive regenerative repeaters for restoring signals to their original form both as to amplitude and phase relationship.

Varioplex Operation. This method of operation, providing a means of making full use of expensive line channels, was considerably extended during the year. Manual relays of telegraphic business between patrons as well as between telegraph offices have, in many instances, been discontinued, thus quickening transmission, reducing costs, and ensuring accuracy. (N. C.)

TELEPHONES. Many technical advances in the past decade have led to the attainment of notably higher standards of telephone service. Outstanding among them are important improvements in the design of the telephone transmitter and receiver and the other apparatus placed in subscribers' premises, and improvements and extensions in line and radio facilities for long-distance communication. During 1938 the use of dial telephone equipment in central offices continued to expand.

The most spectacular telephonic advance, in that it has broken new ground, is to be found in the numerous overseas radio channels which are now operating on an international basis. The first of such channels was that between Britain and the United States, opened for service in 1927. Progress in this field has been so rapid and the demand for international telephony has been so insistent that since 1927 more than 175 overseas radio telephone circuits for the handling of public message business have been created and cover the earth as an invisible yet very substantial network.

The original radio telephone channel between Britain and the United States (it is still in use) employs frequencies lying in the long wave-length range. It has from the outset used the single-sideband type of transmission. More



Fox Photos]

MOBILE HUNDRED-LINE UNIT AUTOMATIC TELEPHONE EXCHANGE FOR USE IN EMERGENCIES

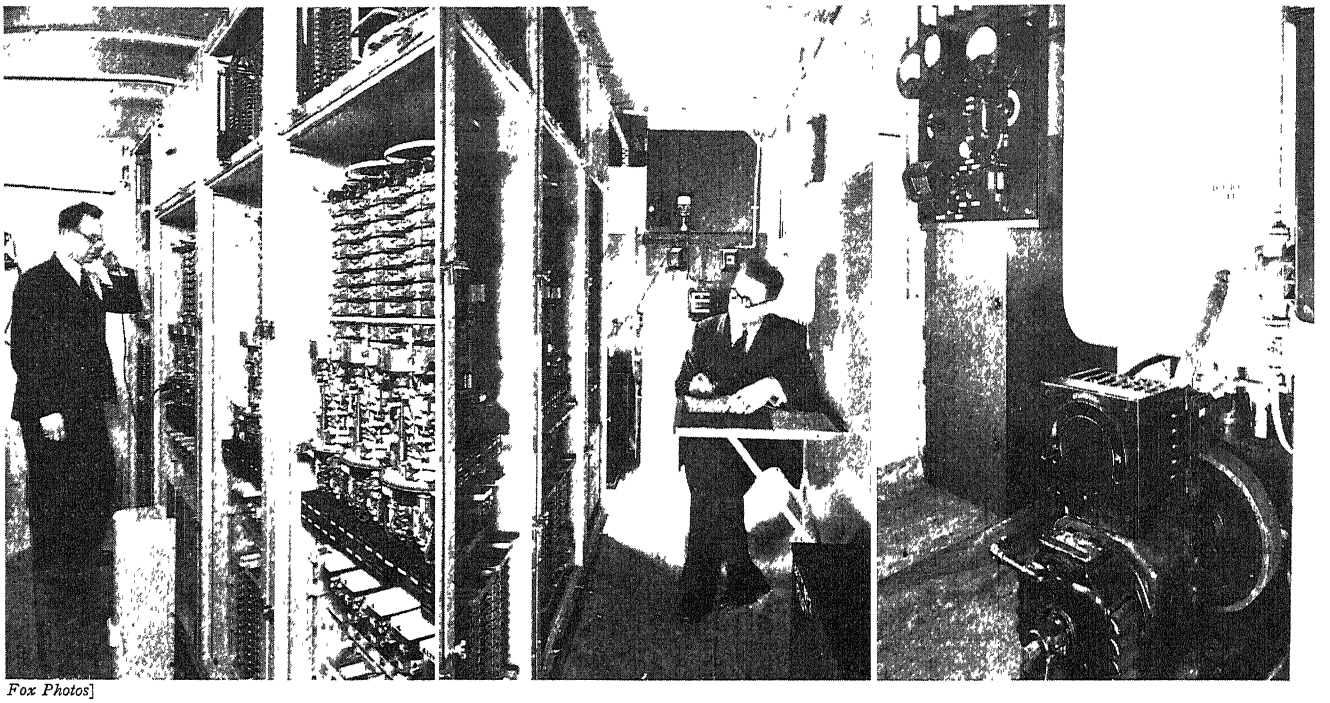
recently, the technical problems presented by the application of the single-sideband principle to short wave-length channels have been overcome, thus effecting important economies in the use of a very important, but limited, range of wave-lengths.

To-day 98 per cent of the world's telephones are interconnected. Behind this rapid advance in international telephony stand, of course, important developments in the instrumentalities of radio communication. Notable among these may be mentioned water-cooled vacuum tubes of large power, greatly improved antennæ, and improved auxiliary devices for the more effective overcoming of the interference which is inevitably associated with radio transmission.

Paralleling these overseas extensions which have been made possible by the radio telephone, additions of very fundamental importance are continuing to be made to the long-distance land lines, both in Europe and in the United States. Wherever possible these additions take the form of lead-covered cable, each cable containing several hundred distinct circuits. The advantages of cable circuits as compared with open-wire lines arise particularly from their increased electrical stability and freedom from failure because of storms, and hence increased reliability in service. By virtue of this important characteristic, the toll cable network of backbone circuits has contributed significantly to a very rapid long-distance service.

In spite of the fact that the usual toll cable carries as many as two hundred to four hundred individual lines, the problem of multiplexing these lines by the "carrier" principle has assumed economic importance. The development of a very successful twelve-channel system has been effected and numerous installations are under way.

One modification of the twelve-channel system is applicable to toll-cable circuits, while another modification is



Fox Photos]

INTERIOR OF HUNDRED-LINE UNIT AUTOMATIC TELEPHONE EXCHANGE. LEFT: PART OF AUTOMATIC GEAR FOR SUBSCRIBERS' LINES' RELAYS CENTRE. THE OTHER END OF THE CAB, SHOWING FOLDING TABLE AND SEAT IN USE. RIGHT: CHARGING EQUIPMENT, A SINGLE-CYLINDER WATER-COOLED PETROL ENGINE AND DYNAMO, AND CONTROL PANEL

applicable to open-wire circuits. As the development of the carrier method has advanced, it has also become economically practicable to apply the multiplex principle to shorter and shorter lines. Three-channel systems are now in use for distances as short as seventy miles, and a system which provides a single carrier channel in addition to the usual voice-frequency channel is applicable down to forty miles.

Improved carrier methods have also been developed for use on the shorter submarine telephone cables, and have found important applications, particularly to the cables connecting England to the Continent.

Coaxial Cable. The coaxial cable, an additional instrumentality for providing more abundant long-distance circuits, is still in its trial stages. In the hands of American telephone engineers it has already been demonstrated as capable of providing as many as 500 telephone channels over a distance of 2,000 miles. In brief, the coaxial cable operates on the multiplex or carrier principle, enabling two pairs of conductors (each pair consisting of a wire surrounded by a concentric metal pipe and used to transmit in one direction only) to provide a large group of telephone channels or, alternatively, a single television channel, depending upon the range of the filters and the amplifying devices or repeaters with which the cable is equipped. In some European countries—notably England, France, and Germany—the coaxial cable has been more stressed as a conductor for the point-to-point transmission of television programmes than as an adjunct to the telephone. Both uses are, however, closely allied and there is every reason to believe that the device will find important future applications in each field.

It will be appreciated that in the case of the coaxial cable, by far the major portion of the development work has necessarily centred on the amplifying and filtering (or band-splitting) devices which are needed. The transmission loss of the cable is such that the message currents must be re-amplified every five to ten miles, while the filters used to separate the hundreds of messages from one another without extravagant waste of the frequency bands separating the channels represent virtually the ultimate limit of refinement.

Crossbar Office. The transformation of central office equipment from the manually operated into the dial-operated type has proceeded steadily. An important new dial system designated by the term "crossbar" has been introduced within the last few months, and is already in operation. It is confidently believed that maintenance costs for the new equipment will be appreciably less than for any of the older dial systems. The designation "crossbar" is, in a sense, descriptive of the fact that by means of rocking strips of metal placed at right angles to each other and controlled by electric relays, contacts are established in obedience to the dial. The new equipment is devoid of driving motors, of sweeping arms, and sliding brushlike contacts. The range of motion of any of the parts is so limited as to be undetected by the casual eye. Of course, so far as the telephone user is concerned, he is unaware of any difference between a crossbar office and the older types of dial offices.

The Marker. An outstanding feature of the crossbar office is the "marker", its electrical brain. This collection of relays reaches out ahead of the call to test groups of connecting routes between the originating office and the called office, selects one that is not busy, and then establishes the desired connexion. If it is unsuccessful in its first attempt, the marker can try three more times before abandoning the hunt and sending back a busy signal to the caller's ear. These various tests are all made in less than a second. But what is still more remarkable, in a call between central offices, if the marker fails to find an idle direct trunk, it can automatically guide the call by way of a tandem office. These tandem offices are in effect central offices for central offices.

Dial System. The important field of application of the dial system is for handling local traffic. Both in Europe and in the United States, however, it is being employed to

an increasing degree for the completion of toll calls. Toll dialling has been in use in Switzerland and Belgium, as well as in certain districts of the United States, and during the past year two areas in the State of Ohio have been converted from manual to dial toll.

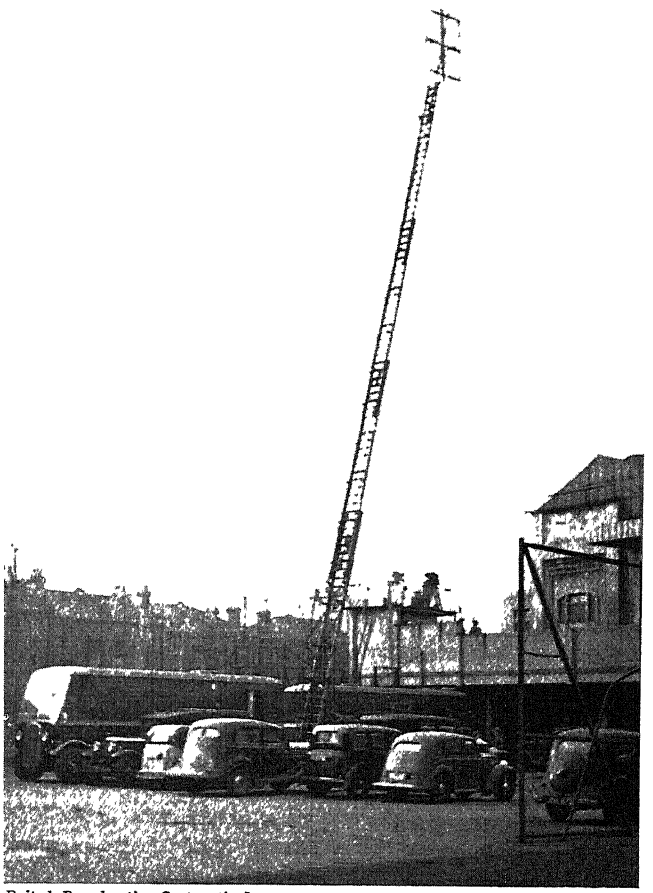
New England Hurricane. From the subscriber's point of view, the net result of the improvements just cited—and all of them are of a major character—has been a steadily better service when considered from such dominant standpoints as cost, speed of service, and interruptions or failures due to equipment faults But a general review of the year 1938, so far as telephones are concerned, would not be complete without reference to the interruption of service caused by the hurricane which swept the north-eastern States of the United States, leaving in its wake the greatest toll of destruction to which telephone operations have ever been subjected Nearly 500,000 telephones were put out of service, chiefly because of the wrecking of aerial wires and cables by falling trees. But floods and bridge failures also caused serious damage both to open-wire lines and cables. To restore service as quickly as possible, telephone construction and repair crews were augmented by men and materials from nearly all parts of the American telephone organization. Twenty-five hundred repair men with 600 lorries and 200 trailers were moved into the affected areas from points as far away as Nebraska, Arkansas, and Virginia. Operators from unaffected areas were flown into regions crippled by the storm, for while the capacity of the telephone facilities was greatly reduced, the number of calls rose to over double the normal number.

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TELEVISION. Important progress has been made during 1938 in the development of television, mainly for broadcast purposes, in many countries, notably Great Britain, the United States of America, Germany, France, Italy, and Holland. The greatest public interest has been in Great Britain, since this is the only country in which a public service of television has been in operation throughout the year. This service was inaugurated in Nov. 1936, and during 1938 important technical progress has been made, the standards and system in use remaining the same, that is to say, 405 lines, 25 pictures per second, involving the transmission of 50 frames per second, each of 202½ lines interlaced, with positive modulation at the transmitter for the picture signals.

The system is that developed by the Marconi-E.M.I. Television Company, and in general depends on the use of the "Emitron", an electron-tube device incorporating a photo-sensitive mosaic screen. It is noteworthy that the standards mentioned above have been established as permanent, so far as the British Broadcasting Corporation's service is concerned, for three years as from the beginning of the year 1938.

Technical progress has been made in several directions, more particularly on the design of the "Emitron" tubes. A new tube known as the "long-gun" type has been introduced, mainly for the televising of programmes taking place in a studio. In this tube the design of the electrodes has been modified so as to improve the focusing of the electron beam, and thereby give improved definition. For the broadcasting of outdoor events, particularly those where it is necessary for the cameras to be at some considerable distance from the scene to be televised, another



British Broadcasting Corporation]
MOBILE EQUIPMENT TELEVISING A FOOTBALL MATCH

new type of "Emitron" has been developed, known as the "Super-Emitron". One of the main objects in view in this case is to obtain greater sensitivity (about ten times that of the ordinary "Emitron") without the use of additional external amplification, which is already used almost to the maximum extent possible. This increased sensitivity makes it possible to obtain a telescopic effect, and to televise satisfactorily, for example, a cricket match or a horse-race even when the light conditions are poor.

Improved apparatus for the televising of ordinary cinematograph films has been introduced at the London television station. This incorporates the continuous-motion type of cinema projector, which removes certain difficulties which are experienced when the more usual shutter type of projector is used. These difficulties concern mainly the synchronizing of the shutter mechanism with the picture synchronizing system. In both cases the general principle of the apparatus is the same, that is to say, an image of the film is projected on to the photo-sensitive mosaic screen of an Emitron tube, the remainder of the process being substantially the same as for ordinary studio work.

With regard to reception, a large number of manufacturers are now offering sets on sale to the general public in the London area. These receivers incorporate improved cathode-ray tubes, giving better illumination and a more pleasing colour than formerly. The service has recently been stimulated by decreases of price of the order of fifty per cent and by the introduction of receivers incorporating small cathode-ray tubes about six in. in diameter, and selling at prices as low as 20 to 25 guineas. The most usual size of picture measures some eight in. by ten

in , which is obtainable with a cathode-ray tube having a diameter of about twelve in. There are also available receivers giving a picture measuring about two ft. by three ft. In most cases this is obtained by projecting on to a translucent screen the image formed on the fluorescent screen of a special high-voltage cathode-ray tube of about four in. in diameter. These tubes are designed to admit of the picture's being reproduced in the first instance with great intensity, so that the illumination is sufficient after projection. The projection process is carried out by an ordinary optical system of lenses. This system has also been applied to apparatus intended for the reproduction of much larger pictures for use in cinematograph theatres Mechanical-optical systems dispensing with the use of a cathode-ray tube are also in process of development for this purpose.

In the United States of America there has been a great deal of activity on the development of television apparatus which, in very broad terms, is similar to that used in Great Britain, although differing considerably in detail. The National Broadcasting Company has been broadcasting experimental programmes using a standard of 441 lines with 30 pictures per second consisting of 60 frames per second interlaced, with negative modulation at the transmitter for the picture signals. No programme service intended for individual reception by the public has yet been introduced, but plans for the regular transmission of programmes for about two hours a week have been scheduled for 1939.

In Germany, a high-definition service was opened in Berlin in Nov. 1938, the standards used being 441 lines, 25 pictures per second, interlaced, with positive modulation for picture signals. The construction of further stations in Germany is under consideration.

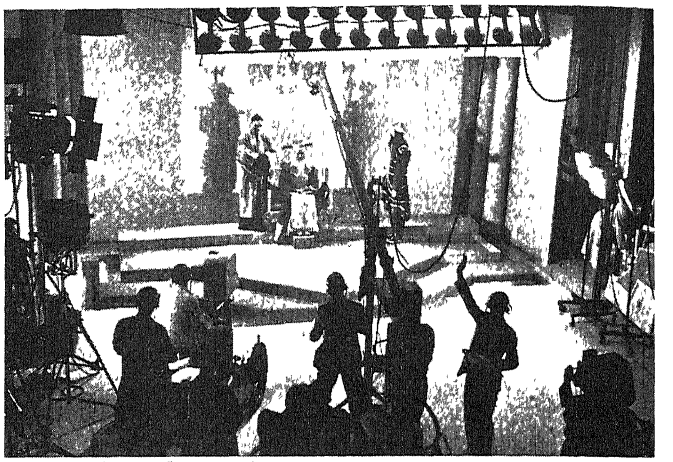
In France, regular transmissions have taken place from the Eiffel Tower, using several alternative systems.

Important experimental work has been carried out during the year in several countries, notably in the United



British Broadcasting Corporation]

TELEVISING MR. CHAMBERLAIN'S ARRIVAL AT HESTON AERODROME ON HIS RETURN FROM BERCHTESGADEN, SEPT. 15, 1938. SUPER EMITRON CAMERA ON THE RIGHT



British Broadcasting Corporation]

TELEVISION OF EUGENE O'NEILL'S PLAY, "MARCO MILLIONS", AT THE ALEXANDRA PALACE, LONDON, JAN. 8, 1939, SHOWING ROBERT HARRIS, GEORGE HOWE, AND AN "EXTRA"

States of America, Germany, and Great Britain, on the transmission over special cables of the wide band of frequencies necessary for linking together several television stations to enable them to radiate a common programme. In the United States successful transmissions have been made over distances of the order of 200 miles, with a modulation band width up to approximately 1 megacycle per second. The problem of how to transmit the wide band of frequencies (about 2½ megacycles per second) necessary to do justice to a picture having a number of lines of the order of 400 is presenting considerable difficulty, and the problem has not yet been solved.

In Great Britain a special air-insulated cable of the balanced pair type has been used for the collection of programme material from various points in the London area. This is capable of transmitting a band of frequencies up to 2½ megacycles per second, but the maximum length of the cable is at present only about eight miles. Work has also been carried out in this country on the possibility of transmitting this frequency band through ordinary telephone lines over short distances of the order of two or three miles. The aim in this case is to make it possible to use spurs connected to the special cable, increasing the area over which programmes may be picked up. Successful transmissions using this method have been carried out as part of the regular programme service. For the handling of programmes originating at greater distances, an ultra-short-wave transmitter is used which transmits the programme to the main television transmitter from which it is re-radiated.

Two outstanding difficulties which apply to all countries have tended to retard the introduction of television broadcasting on a national scale. The first concerns the problem of obtaining coverage on a large scale while using wavelengths of the order of six metres, which is unavoidable for high-definition television. The second, which is at present more serious than the first, concerns the transmission of the wide band of frequencies over long distances for linking purposes, as already mentioned. At the same time the cost of producing a large number of individual programmes associated with each station has made such a solution unacceptable. It has been suggested that a way of meeting the difficulty would be the establishment of a chain of narrow-beam ultra-short-wave transmitters and receivers, situated on high ground and spaced at distances of about fifty miles. At the end of 1938, experimental

work was proceeding on both the wireless and cable methods of linking.

In the spring of 1938, the International Telecommunications Conference at Cairo which, among other duties, had the task of allotting specific wavebands to the different types of wireless service, fixed certain bands for the general use of television stations in Europe. The latter were as follows:

40·5–58·5	megacycles per second	(7·405–5·128	metres)
64 –70·5	,,	(4·688–4·255	,,)
85 –94	,,	(3·529–3·191	,,)
170 –200	,,	(1 765–1·500	,,)

This action is interesting, since it is the first occasion on which the needs of television broadcasting were recognized by an international conference of this kind. (N. As.)

TENNESSEE VALLEY AUTHORITY. The Tennessee Valley Authority was created by Act of the United States Congress in 1933 to develop the water and power resources of the Tennessee River and tributaries. It serves an area of 41,000 sq. miles in seven States

Its subsidiary activities include the development of agriculture, encouragement of animal husbandry, reforestation of denuded areas, and promotion of the use of electricity for such new purposes as drying of hay and freezing of agricultural products, and embrace immense engineering achievements and projects.

In May 1938, $2,600,000 was appropriated for Gilbertsville dam, which is to cost $112 millions, and will surpass all the other dams of the TVA in magnitude. It will control the waters of the Cumberland River as well as the Tennessee.

In January, the TVA was managed by a triumvirate—Arthur E. Morgan, chairman, in charge of construction; Harcourt A. Morgan, entomologist and horticulturist, especially interested in the fertilizer programme; and David E. Lilienthal, a lawyer who gave particular attention to the problem of power distribution. Difficulties arose within the Authority, and in March the chairman complained of "moral and ethical" lapses on the part of his two colleagues. The President summoned the divided board to lay the situation before him, but the chairman insisted on a Congressional inquiry. The President thereupon found him to be in a state of "contumacy", and dismissed him, appointing Harcourt Morgan in his stead. Dr. Arthur Morgan sought to challenge the dismissal. Congress ordered an investigation.

The United States Supreme Court has ruled that the TVA is entitled to sell power generated at Wilson dam, but controversy has arisen over its general constitutionality, and over the "yard stick" of prices at which electric power generated by the TVA should be distributed, announced in 1933 by David E. Lilienthal. According to Dr. Arthur Morgan, a policy of treating power only as a by-product of navigation and flood control and of eliminating the cost of dams from the accountancy on which prices of power are based, implies a subsidy to the distribution, and must militate severely against private competition, however efficient it may be. Utility companies have repeatedly challenged the "yard stick" in the courts.

TENNIS. There was a great revival in tennis during 1938, especially at the Royal Court, Hampton Court Palace, and many good games were seen.

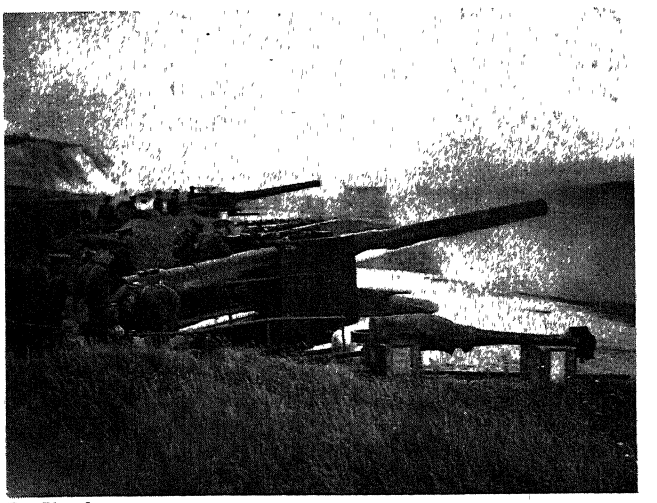
Lowther Lees, holder since 1933, was succeeded as amateur champion by Lord Aberdare, the 1932 holder, who beat W. M. Ross-Skinner in the final; and Lees's open championship was taken by J. Dear, the Prince's Club professional, who also holds the professional championship in squash rackets and tennis. England beat France for the Bathurst Cup (international) both in the doubles (Lord Aberdare, R C. Riseley) and singles (Lord Aberdare and W. M. Ross-Skinner); the Bailey Cup for inter-club doubles went to Queen's Club I (Lord Aberdare and W. D Macpherson); R. H Hill won the M C.C. silver prize; Oxford beat Cambridge in the doubles for the seventh successive time, while the singles were drawn; and in the old public schoolboys' contest for the Henry Leaf Cup the Old Etonians beat the Old Harrovians in the final but in the challenge round were defeated by the Old Wykehamists, who thus retained the cup.

TENNIS, LAWN: *see* LAWN TENNIS.

TERRITORIAL ARMY. During 1938 the establishment of the Territorial Army was increased by 974 officers and 21,358 other ranks to a total of 11,231 officers and 212,808 other ranks. This was due to the expansion of the anti-aircraft forces for the defence of Great Britain, which have been raised from an establishment of 47,822 all ranks to one of 87,366, while being reorganized as five divisions instead of two The total increase in the establishment would have been greater but for the fact that the size of the field army divisions has been reduced in process of remodelling their pattern

The rise in actual strength has been still more striking, the number of recruits enlisted between April and December having been doubled in comparison with the same period in 1937—60,167 against 30,954. As a result the total strength of the Territorial Army on Jan. 1, 1939, was 204,009 all ranks, of whom 69,610 were in the anti-aircraft divisions.

While the rise has been directly due to public awakening to the dangers of the international situation, it has been helped by improvements in the internal conditions of service. Much has been done for the Territorial Army recently. Increased grants have enabled better provision to be made for the comfort of the men. They benefit at camp by a more generous scale of feeding and clothing, and, out of camp, by increased payment for travelling to drills as well as other amenities. The officers have gained most through enlargement of opportunity. The former limitation on the number who could be given command of brigades or equivalent appointments has been abolished. Promotion to a divisional command has actually been achieved in one case. The Territorials' just claim to direct representation in the War Office has been conceded by creating the office of Deputy Director-General of the Territorial



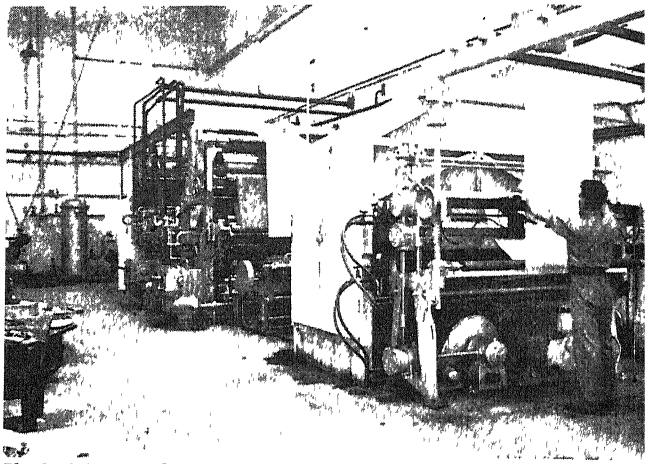
Fox Photos]

TERRITORIALS AT ARTILLERY PRACTICE, FIRING SIX-IN. GUNS WITH LIVE SHELLS, AT YAVERLAND FORT, ISLE OF WIGHT

Army, and appointing one of its members to that office Entry to the Imperial Defence College and the Staff College has been opened to them Parity of treatment has also been accorded by giving the commanders of Territorial brigades the grade of brigadier, as in the case of Regular brigades ; by giving the Regular adjutants and sergeant-majors of Territorial units the same rate of pay as those of Regular units These measures, which were justified in themselves by the work and responsibility involved, have enhanced the status of the Territorial Army in its own eyes and in those of the public Further reforms were introduced in the autumn of 1938 One was the organization of a part-time Staff Course for Territorial officers. Another was the creation of an Auxiliary Territorial Service for women, which will free more men for combatant duties But the most important of all was the reorganization of the field units of the Territorial Army to provide nine infantry divisions of the new nine-battalion pattern, three motorized divisions each comprising six infantry battalions and one motor-cyclist battalion, and the components of a mechanized Mobile Division. An excellent feature of the new organization is the increased proportion that the supporting arms will bear to the infantry—in other words, the improved ratio of fire-power to man-power. Out of some 140 Territorial infantry battalions provided for in the current Army Estimates, only 99 will be required for the reorganized divisions, leaving a large balance for conversion into the new types of unit which the divisions require to make them effective instruments for modern war. When their equipment is completed, they will treble the strength of Great Britain's potential field force for use abroad. It is to be hoped, however, that the very large outlay which will obviously be necessary will not be allowed to interfere with the still more urgent need for bringing the country's anti-aircraft defences up to an adequate scale. (B H. L. H.)

TERRY, SIR RICHARD (RUNCIMAN), British musician, was born at Ellington, Northumberland, in 1865, and died in London on April 18, 1938. A notice of his life and work may be found in the *Ency. Brit.*, vol. 21, p. 973. Besides composing five Masses and a Requiem, he wrote many Motets and much other Church music. His later books included *A Forgotten Psalter and other Essays* and *Voodooism in Music,* and he also edited a great deal of hitherto unpublished sixteenth-century English music.

TEXTILE INDUSTRIES. For the British textile industries 1938 was a most difficult trading year, trade cycle " recession " combining with acute political disturbances in Europe, leading to the war-danger crisis in September. At the end of the year, struggles in China and Spain, international unrest in eastern Europe and the Mediterranean, anti-Semitic movements in several countries worked against the manifold links of textile export trade. Rearmament orders for textiles are comparatively small in relation to output, but defence and military requirements in Britain and elsewhere provided boomlets for jute sandbags, crossbred wool materials for uniforms, linen and cotton fabrics for aeroplanes, balloons, parachutes, and gas masks. However, machinery generally has been far from fully active. The decline in the cotton and the wool industries has been renewed, and they are smaller by three per cent in number of insured workers. Cotton spinning and weaving has lost 169,000 insured workers since 1927, leaving 393,050, and wool 24,030, leaving 239,000, but the production is still enormous, and the high output per operative and higher value should not be forgotten. Hosiery, carpets, silk, and " other textiles " are still expanding industries, and linen,

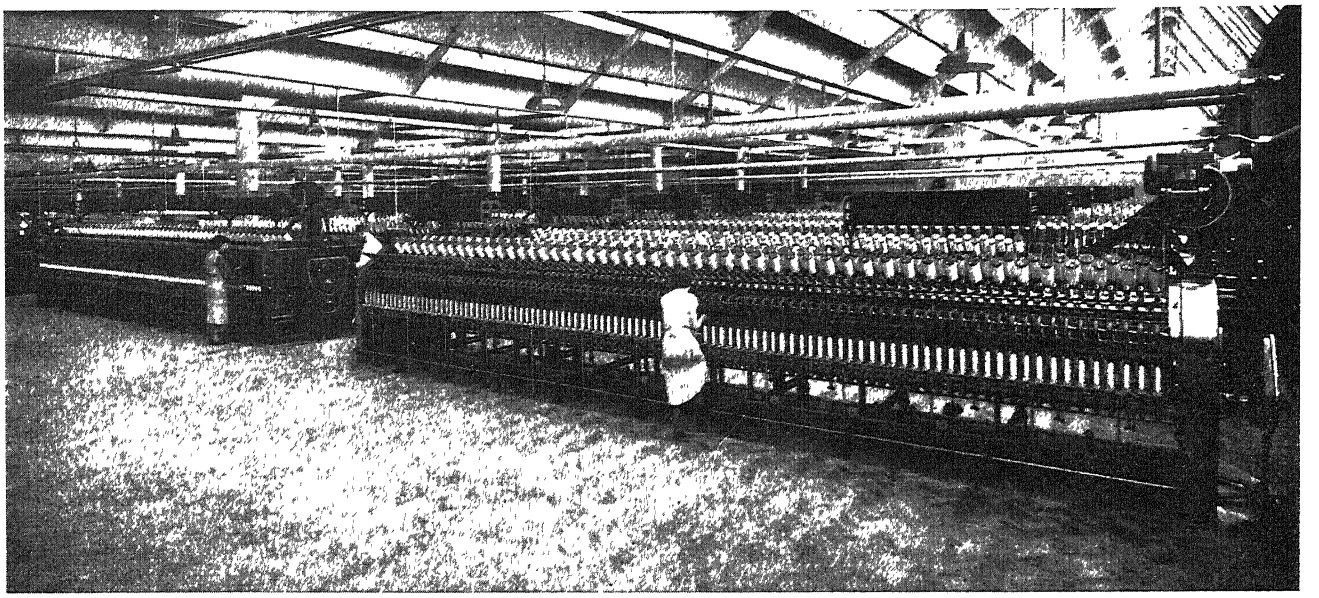


Bleachers' Association]

PROCESS FOR RENDERING COTTON, RAYON, AND LINEN FABRICS UNSHRINKABLE, KNOWN AS " SANFORISING "

jute, lace, bleaching, dyeing, and printing hold their own. Rayon had a big set-back, the first since 1931, conditions of trade being very poor, but some expansion in spun rayon staple fibre is hidden in the cotton and wool figures A brighter feature was the improved figures of textile and other production and consumption in the U.S.A., though recovery is not complete. The Anglo-American trade Agreement (Nov. 17) gives hope of increased trade with the U.S A. in textile specialities and luxury goods, particularly linens, in return for farm products, such as wheat, hams, canned fruits, etc. The trade balance against the United Kingdom is, however, still enormously adverse. The cotton goods export trade has suffered a severe blow in Egypt, where a new domestic industry has led to penal tariffs and restricted quotas, and the long-continued Anglo-Indian trade negotiations are at deadlock. There is recovery in the important West Africa market and Argentina. British textiles of all classes have met the competition at home and abroad of subsidized foreign goods, these being in some cases a new method of trade by totalitarian states, in search of *devisen,* which makes chaos in the markets.

Fibres. The American cotton crop of 12,137,000 bales, with the " carry over " of 13,652,000 bales, contributes to a world supply of 50,900,000 bales against a consumption of less than 28,000,000 bales. The United States government has been forced to acquire some 3,500,000 bales at a price about 8·9 cents per lb., making its embarrassing holdings over 10,000,000 bales, with small and uncertain prospects of liquidation in the foreseeable future. Hence raw cotton prices have been depressed, without confidence, between a low 4·20*d.* per lb. (May 31) and 5·20*d.* (Nov. 29) Liverpool, Mid-American. Wool prices have been very steady, not far from the present basis of 26*d.* per lb. Bradford 64's warp tops. There is an aggregate decrease of 72,000,000 lb. of wool produced in Australia, New Zealand, and South Africa, offset by the reduced takings of about 150,000,000 lb. by importing countries, Japan and the U.S.A. accounting for the deficiency. In spite of industrial slackness, raw wool has been in firm demand, particularly crossbreds. Flax supply is subject to still tighter control by the U.S.S.R. and the Baltic States, and many think the cost of flax is too high. Proposals for expanding flax cultivation in the United Kingdom or the Empire are becoming more serious now that possibilities of mechanical flax pulling, new systems of retting, or the elimination of retting and mechanized fibre extraction in factories are becoming practicable. The Bengal government forecast of the jute crop was



Courtaulds, Ltd] WORSTED SPINNING OF " FIBRO " AT WESTCROFT MILL, BRADFORD

6,700,000 bales, but as usual this is expected to be well below the figure of arrivals into Calcutta Failure after long efforts to obtain a voluntary agreement amongst the Indian jute mills led the Bengal government to impose an ordinance leading to a 45-hour week, except for five small mills. This has relieved the pressure of production from a greatly excessive equipment, but with the state of demand, jute goods competition in overseas trade and in the United Kingdom was very severe except during the war-fear crisis. Dundee has made many complaints of the increased imports of jute goods from India New types of cut staple rayon fibres have been introduced. A strong " Fibro " of Courtaulds of 1·25 denier, usually $1\frac{3}{4}$ in. long for modified cotton spinning, has extended the range of spun rayon yarns to 2/80's and 2/100's and even single 120's. Wool-dyeing viscose-base fibres have made progress, and casein fibres and mixtures with viscose have been introduced as cut fibres, the dyeing properties of these being similar to wool. Ranges of coloured " Fibro " are now available, and also water-repellent " Fibro ". Difficulties of manipulating acetate cut fibre, arising from static electricity, have been overcome. The introduction of these cut fibres have meant an extension of use in the woollen and worsted industries. An acetate " strong " filament yarn has been introduced. An outstanding introduction is " Nylon ", a polymeric amide, having a protein-like chemical structure and derived from coal residues, which is to be produced on a large scale by E.I. du Pont du Nemours in America. This and other new filament fibres aim at greater fineness and the replacement of silk for hosiery. There are many attempts to make tyre cord of rayon.

Textile Processes and Machinery. No revolutionary innovation appeared during 1938 nor, indeed, can be expected, but there is continuous progress of refinement. Cotton opening and cleaning has been further mechanized by pneumatic conveying and electrical control, and mechanical devices adopted to allow large laps which, with larger card cans, further reduce manual work. Reduction of intermediate processes has been facilitated by finer drawing slivers, can packing, and high-draft speed frames. Ring frames have new spindles, including improved roller-bearing spindles, allowing higher speeds and improved motor drives. Woollen machinery has received attention in blending, opening, and oiling, using pneumatic conveyance, and there is a tendency to modify carding sets towards the so-called continental sets The ring frame makes a small amount of progress against the mule. The Continent has produced an all-electric driven mule. Worsted carding developments have been on burr removal or burr crushing. Large package spinning and twisting of knotless worsted yarns has favoured the ring frame. Winding machinery generally continues to attain higher speeds, and automatic pirn winders have been introduced this year. The outstanding development in weaving is the two-shuttle automatic shuttle-changing loom. Dobbies have facilities for greater length of pattern by use of paper pattern bands or three or four cross-border lag cylinders. Rayon for weaving is put on flanged beams, micrometer adjusted for width, instead of papered beams. A dyeing development are the new stainless-steel machines for cone, cheese, and beam dyeing of yarn. Pin stenters with overfeed and opening arrangements, electrical control, with balanced blast drying, are a notable introduction. An automatic " Auto-lift " hydro-extractor is a step in further mechanization. New dyes, new chemical auxiliaries, proofing agents, crease-resistant resin treatments, etc., are all in the direction of greater permanence of finish. In hosiery there is an extension of the production of cotton interlock and many detail refinements.

Textile Organization. Over-production, due chiefly to poor export trade, has increased the concern with problems of reorganization and price cutting. The Cotton Industry Enabling Bill is almost ready. The Cotton Spindles Board has purchased 4,569,000 spindles, and will continue for a third year; redundancy is, however, larger than ever in the present state of trade. One of the five agreements for cotton yarns prices collapsed in September, namely, for American cotton ring yarns of medium counts. The worsted spinners have engaged in the drawing up of a plan for elimination of redundant plant and some price control. Labour troubles have been confined to individual firms. The major labour topic is that of holidays with pay, which has not yet been generally granted owing to the state of trade. Cotton and rayon weavers have continued to oppose any double shift working, and suggestions have been made for a minimum wage. The Leicester hosiery trades have become alarmed at the competition of knitters in " outside " districts, and are moving to reduce wages. (H. C. B.)

THEATRE. It is commonly believed that, at a time of social uneasiness and political tension, the drama will tend to be more and more a vehicle of "escape", and that the light entertainments will be far more popular than serious ones. During the stormy year of 1938, this opinion turned out to be only partly true. In London, while such light-hearted comedies as *George and Margaret* and *French Without Tears* took the year in their triumphant stride, there was success no less awaiting such a macabre foreshadowing of Armageddon's eve as Mr. Robert Sherwood's *Idiot's Delight*. This play, cosmic tragedy with a relieving vein of personal farce, ended with a crash of bombs: the crisis of September very nearly ended its run, but not quite. The life of the piece was renewed after Munich, and flourished abundantly on a cheaper scale of prices.

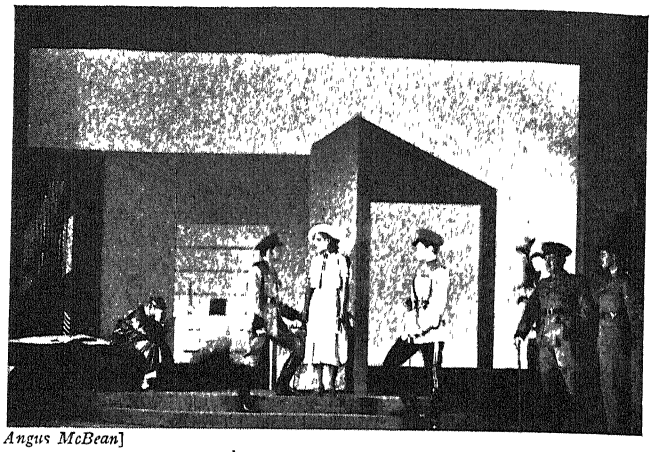
In London the price-issue was much discussed, and there was a general tendency to find ways and means of lowering the cost of seats, especially by doing so at the end of a run, or by instituting special cheap seasons, with no loss or even with enhancement of quality, such as that which Mr. J. B. Priestley and Mr. Ronald Jeans gave at the Westminster Theatre. This began with a version of *Troilus and Cressida* in plain clothes. Shakespeare thus modernized on the surface was in vogue once more. At the "Old Vic", for example, a modern-dress *Hamlet* won much approval and attention.

There is little doubt that in any playhouse, ancient or modern, the man of all trades, "Johannes Factotum" as they called Shakespeare in his youth, is at a great advantage. Mr. Noel Coward, whose Edwardian musical piece *Operette* was his only 1938 production, has proved this point before: Mr. Emlyn Williams confirmed it. Protagonist and producer of his own play, *The Corn is Green*, at the Duchess Theatre, he scored a brilliant success with his vivid picture of a pit-boy who is a potential genius, is rescued for education by a well-meaning lady, and very nearly throws away all his exceptional chances by surrender to the ways of all flesh. Mr. Williams introduced playgoers to a most unusual environment and range of ideas, and his courage and skill were well rewarded.

Mr. Charles Morgan's excursion into drama with *The Flashing Stream*, at the Lyric, met with very great favour. He had used his theme—the sexual interruption of single-mindedness in work—to great theatrical advantage, combining it with an effective piece of story-telling about an aeronautical discovery. The solidity of Mr. Godfrey Tearle and the brilliance of Miss Margaret Rawlings ensured its appeal. Higher up the famous Avenue Mr. St. John Ervine's scenes of clerical life in *Robert's Wife* continued throughout the year to command packed houses. The idea that only flippancy would pay in troubled times was once again falsified.

In the same street a version of the much-loved *Good-bye, Mr. Chips* made a sentimental bid for affections, and won. Miss Dodie Smith, with the exceptional advantage of Dame Marie Tempest and Mr. Gielgud in one cast, presented in *Dear Octopus* a huge family group, and her offer was greedily taken up by the public, which fully appreciated her command of domestic comedy, pathos, and detail.

M. St. Denis, whom one now regards as an asset of the English rather than the French stage, started a season of his productions at the Phœnix Theatre. He had collected a permanent company of rare lustre, many of whom had worked together under Mr. Gielgud. One can especially select for mention Mr. Michael Redgrave: he was "the arrival" of the year, confirming the promise of his work in the Gielgud season by brilliant performances in Bulgakov's *The White Guard* and, more astonishingly, as Sir Andrew Aguecheek in *Twelfth Night*.



Angus McBean]
LONDON MASK THEATRE'S MODERN DRESS PRODUCTION OF SHAKESPEARE'S *TROILUS AND CRESSIDA* AT THE WESTMINSTER THEATRE

The brief summer visit of Miss Lynne Fontanne and Mr. Alfred Lunt with their American-French-Grecian comedy, *Amphitryon, 38*, was most welcome and all too short for London's eagerness to see them, not only in this, but in a wider range of work. Another American import to be much approved was the vigorous *Golden Boy* of Mr Clifford Odets. It was a bad year for English exports, unless they happened to be classics. New York welcomed Shakespeare and even Dekker. Of London's modern plays Mr. Ian Hay's *Housemaster*, and *Oscar Wilde* by Leslie and Sewell Stokes, most pleased on Broadway, which showed a puzzling unwillingness to realize the virtuosity and versatility of Mr. Priestley.

English and Irish teams did some excellent international work under the auspices of the British Council, which is now taking a considerable interest in drama as a form of national expression and projection. The Dublin Gate Theatre Company went to Greece in the spring, while the "Old Vic" players began an extensive tour with a repertory of eight plays, including Shakespeare and Shaw, at mid-winter, visiting Portugal, Italy, Greece, and Egypt.

Summer dramatic festivals are increasingly popular. In July there were the usual delightful open-air performances at Tewkesbury. Dublin invited the world to see a collection of Abbey Theatre productions in August, and Buxton in September as usual provided the Old Vic Company with an attractive spring-board for its autumn season. The most illustrious of all the festivals had previously been celebrated at Malvern, where there was an exciting series of new plays by Bernard Shaw, J. B. Priestley, James Bridie, Lord Dunsany, and C. K. Munro. Mr. Shaw's political satire on dictators and public justice, called *Geneva*, was later transferred to the Saville Theatre in London. Mr. Priestley's striking fantasia, *Music at Night*, will certainly be seen again later. Malvern has never been so full or offered so fresh and lively a programme. In 1939 it is likely to have Bath as a rival. The summer festivals in England continually gain favour and prestige.

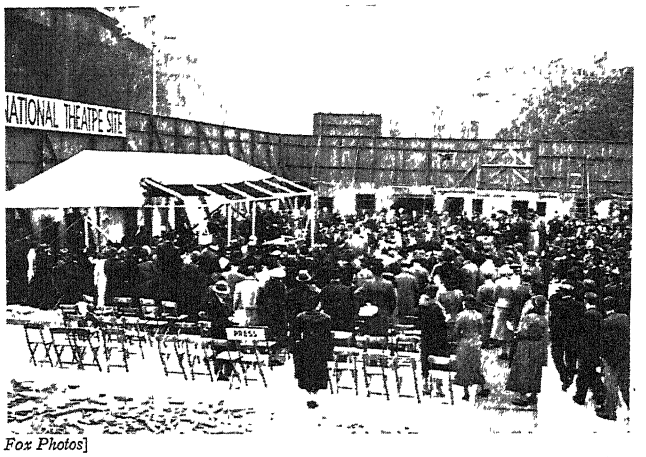
The campaigners for a National Theatre were very active during 1938. The site in South Kensington was taken over and the deeds of possession were transferred in the spring. The architects began to draw up plans and the search for funds was briskly prosecuted. One method was to endow for £100 seats in the name of famous theatre-workers and enthusiasts. Great actors, playwrights, and critics were thus remembered in a way likely to promote the art which

they had served or enjoyed. Mr Bernard Shaw selected the old "visiting tragedian" Barry Sullivan for the honour of his gift Meanwhile, the Shakespeare Memorial Theatre at Stratford-on-Avon enjoyed yet another year of great prosperity, and its productions, though not always viewed favourably by London, gratified the midland town and its myriad visitors The most talked-of item there was a fantasticated version of *The Comedy of Errors*, in which Mr Komisarjevsky indulged his sense of fairy-tale with rare invention. (I. Br)

United States. The most conspicuous events in connexion with the American theatre in 1938 were, first, the progress made in co-ordinating the resources of the American Theatre Council towards the encouraging of interest in the theatre throughout the nation and, second, the organization by five leading dramatists of a Playwright's Company to produce their plays independently of other managers and producers The playwrights in question are Robert E Sherwood, Maxwell Anderson, S N. Behrman, Elmer Rice, and Sidney Howard. Three plays were produced: *Abe Lincoln In Illinois*, by Sherwood; *Knickerbocker Holiday*, by Anderson; and *American Landscape*, by Rice. As for the American Theatre Council, which embraces managers, producers, playwrights, actors, and others associated with the stage, its efforts were centred chiefly upon three points: the institution in various cities of organized audiences patterned after the idea originated some years ago by the Theatre Guild, the control—in collaboration with the League of New York Theatres—of ticket brokers and the putting an end to so-called scalping and excessive over-charges on tickets, and the stimulation of audiences outside of New York to re-invest their old-time interest in the theatre.

The Drama Critics' Circle's award for the best new American play was presented to *Of Mice and Men* by John Steinbeck, a remarkably eloquent study of two vagrants, dramatized from his own novel of the same name. The critics' award for the best European play to be shown in America went to *Shadow and Substance* by the Irish Paul Vincent Carroll, a beautifully contrived picture of sheer purity of faith victoriously opposed to faith profoundly meditated out of much of its basic strength. The Pulitzer prize was given to Thornton Wilder for his *Our Town*, a fantasy, played on a bare stage, dealing with birth, love, life, and death in a New England village.

The year was notable for other phenomena. Maurice Evans presented, for the first time in America, the unabridged version of *Hamlet* and achieved not only the unanimous approval of the critics but also box-office success. The Federal Theatre Project improved somewhat upon its previous season's record by following up its stirring Living Newspaper picture of tenement conditions, "*. . . one third of a nation*", with a play about Lincoln in his early years, *Prologue To Glory*, by E. P. Conkle, and a melodrama about the Black Napoleon called *Haiti*, by William Du Bois. The Mercury Theatre, after an excellent revival of Dekker's *The Shoemakers' Holiday*, and an indifferent revival of Shaw's *Heartbreak House*, disappointed its more persistent admirers with a pretentious and dull revival of Georg Buchner's *Danton's Death*, originally produced in America some years ago by Max Reinhardt. The Theatre Guild, once the foremost native producing organization, continued to indicate its steadily progressive decline in the sponsorship of a number of poor plays, all failures. The Group Theatre, which gives indications of taking the place in the community once occupied by the Guild, produced as a successor to its successful *Golden Boy* of the previous



Fox Photos]
MR. BERNARD SHAW RECEIVING DEEDS OF THE NATIONAL THEATRE ON THE SITE AT SOUTH KENSINGTON, LONDON, APRIL 22, 1938

year another play by Clifford Odets, *Rocket To The Moon*, and, close upon the heels of the new year, a new play by Irwin Shaw, author of *Bury the Dead*, called *Gentle People*.

Among the more successful popular plays were *Kiss The Boys Good-bye* by Clare Booth, whose *The Women* was one of the considerable successes in the previous season; *On Borrowed Time* by Paul Osborn, which subsequently failed of patronage in both London and Chicago; *What A Life*, a minor schoolboy comedy by George Goldsmith; *Oscar Wilde*, a biographical exhibit by Leslie and Sewell Stokes; and *Bachelor Born*, an English school play by Ian Hay. All the prize award plays found favour as well with audiences, as did the first two productions of the above-mentioned Playwrights' Company, to wit, the Sherwood and Anderson exhibits, the latter a musical comedy.

Various other musical shows enjoyed uncommon prosperity, chief of them being a wild vaudeville buffoonery dubbed *Hellzapoppin*, two shows by Richard Rodgers and Lorenz Hart named respectively *I Married An Angel* and *The Boys From Syracuse*, the latter a derivation from Shakespeare's *The Comedy Of Errors*, and Cole Porter's *Leave It To Me!* The Ladies' Garment Workers Union's *Pins and Needles*, produced in the antecedent season, continued through 1938 to prosper throughout the country.

To come to the players, Helen Hayes continued to pack theatres on the road and, for several return months, also in New York, in her last year's vehicle *Victoria Regina*. Katharine Cornell tried out a version of Hebbel's old *Herod and Marianne* by Clemence Dane, but, after several weeks on tour, found it wanting and abandoned the production in Washington, D.C. Ina Claire had the same unfortunate experience with a comedy called *Yankee Fable* and cast it aside after a brief engagement in Boston. Robert Morley, an English actor, scored heavily in *Oscar Wilde*, as did Sir Cedric Hardwicke, another English actor, in *Shadow and Substance*. Raymond Massey, a Canadian, drew the public's endorsement as Lincoln in the Sherwood play; the Lunts found a varying degree of favour in a revival of *The Sea Gull*; Orson Welles disappointed his followers in both *Heartbreak House* and *Danton's Death*; and Walter Huston acquitted himself nicely as the peg-legged Peter Stuyvesant in *Knickerbocker Holiday*.

The overnight failure and closing of more than 25 new plays, most of them worthless, in the period between September and the first of the year indicated more emphatically than ever before the demand of the new theatre public for a better grade of drama, and indicated no less pointedly that the cleavage between the motion-picture audience and

the present theatre audience is growing wider as year follows year. The increasing indisposition of Hollywood executives to buy the picture rights to the better plays indicates that cleavage even more forcibly. (G. J N.)

THEOLOGY: GENERAL TRENDS. On the European continent catastrophic political and social events have produced a sense of crisis and tragedy which has made theology seem vitally relevant, and in particular the problem of the nature and destiny of man is now of absorbing interest The situation has produced many notable theological builders, who in diverse ways are trying to repair their theological structures and to strengthen them against further shocks. Three chief groups are found. in (exiled) Russian Orthodoxy, Roman Catholicism, and German Protestantism.

No longer can Eastern Orthodox theology be regarded as static or moribund. Eastern theologians are contributing much, both by their writings and by their active participation in conferences such as those at Oxford and Edinburgh in 1937 In 1936, for the first time for 250 years, a conference of Orthodox theologians was held at Athens, to consider their faith in the light of modern problems and their relations with other communions. A second conference is to be held this year at Bucharest to discuss "The Sources of the Faith" and "The Social Task of the Church". It is, however, the Russian group at Paris which has attracted most attention, particularly Sergei Bulgakov and Nikolai Berdyaev, priest and layman respectively. Bulgakov, once a Marxist professor of economics at Moscow and now a theological professor at the Russian Academy in Paris, is specially known for his "Sophiology", a difficult doctrine of Divine "Wisdom". His recent book, *The Wisdom of God*, is his best exposition of his views. Berdyaev's thought owes much to Dostoyevski, and like Bulgakov he is a convert from Marxism. He is a prophetic figure, of apocalyptic vision, ready to think, as he has lived, dangerously. His dominant theme is the freedom and eternal worth and destiny of the individual, as against all forms of authoritarianism. His book, *Solitude and Society*, published in 1938, considers personality in relation to society. The very liberal trend of this philosophical theology is remarkable in so conservative a tradition, and is in striking contrast with modern German Protestant tendencies.

The theological revival within Roman Catholicism is of a neo-scholastic type. The most representative figures are Jacques Maritain and Étienne Gilson, of Paris, and Erich Przywara, of Munich. Maritain, literary critic and convert, preaches Thomism as the remedy for the intellectual ills of mankind. Two works of his were translated into English in 1938: *The Degrees of Knowledge*, a long, philosophical work, and *True Humanism*, which sets forth a Christian polity based on a theocentric view of man. He has much in common with Berdyaev on the subject of man's destiny, but is more pessimistic about the immediate future of Christian civilization. Gilson, a great authority on mediæval philosophy, is not so exclusively Thomist as Maritain, and emphasizes the contributions of other scholastic thinkers to the mediæval synthesis. This is illustrated by his *Philosophy of St. Bonaventure* (Eng. tr. 1938), in which he maintains that Bonaventure's system was indispensably complementary to that of Thomas Aquinas. The book provides valuable data for re-estimating the importance of Thomism in Roman theology. Przywara, though less well known than Karl Adam, is probably the most important philosopher-theologian in German Catholicism to-day. In considering the problem of the relation of God to the world, he has restated the old doctrine of the "Analogy of Being", using much of the modern German dialectical method. His emphasis on God's immanence is anathema to Karl Barth, while Alfred Rosenberg (*Myth of the Twentieth Century*) attacks his equal emphasis on God's transcendence It is becoming clear that neo-scholasticism is something more than a temporary revival, and it affords an important contrast to the anti-intellectual attitude of Barthianism

German theology has recently shown a reaction against Liberal Protestantism parallel to the national rejection of democratic liberalism. There has arisen a new militant Protestant orthodoxy, vigorously preaching Scripture, revelation, faith, grace, not reason or "works". Its first prophet was Karl Barth; but in view of the differences of opinion between Barth and his erstwhile followers, it is now misleading to call the movement "Barthian", and "dialectical theology" and "theology of crisis" are more exact descriptions. In contrast with the Nazi totalitarian doctrine of the State, Barth proclaims a totalitarian doctrine of the Word of God. An ultra-pessimistic doctrine of man leads to a denial that reason has any place in our apprehension of God, and to an assertion of God's sovereignty and transcendence and "wholly-otherness". Theologies of immanence and the notion of an "Analogy of Being" are rejected with contumely, and faith becomes an irrational leap in the dark. A second volume of his *Kirchliche Dogmatik* has recently appeared, as have also his 1937–38 Gifford Lectures on *The Knowledge of God and the Service of God*—a theological commentary on the *Confessio Scotica* of 1560. Emil Brunner has disagreed with Barth on many points, notably in holding that there has been a "general revelation" of God in nature, conscience, and history. But both agree that God's revelation is in no sense man's discovery. A more mediating position is adopted by the German theologians, Karl Heim and Paul Althaus, Junr., whose writings, particularly on eschatology, are likely to have a growing influence.

The Barthian influence has naturally been felt in other countries—as, for example, in Holland (*cf.* Professor Haitjema of Groningen) and Czechoslovakia (*cf.* Dr. Hromadka of Prague). In France, Strasbourg, as represented by Professor Fernand Ménégoz, has found an adjustment between the new views and the old liberalism. Paris is still assimilating this new theology; the trend seems against liberalism, even of a type like Wilfred Monod's, but the Barthian group under Pierre Maury seems to have less influence than the more scholastic type of Calvinism represented by Professor Lecerf.

In the Lutheran Church of Sweden the school of Lund, though sympathetic with the Barthian reaction against liberalism and owing something to Althaus, has been working out a theology on moderate and original lines. Gustav Aulén's revival of the "classic view" of the Atonement in *Christus Victor* is well known in England, and an English translation of the second part of Anders Nygren's *Agape and Eros* is now due.

British theology seems to be quietly working towards a synthesis between the Christian faith and modern thought. The continental systems are receiving sympathetic though critical attention, and a special study of dialectical theology is being made in Scotland. The dominant point of view in Anglican theology might be labelled "Liberal Catholic". Its influence is seen in the Report, issued early in 1938, on *Doctrine in the Church of England*, the fruit of fourteen years' work by a commission of Anglican theologians of vary-

ing views. It does not claim to be a systematic outline of theology, for its purpose is to examine those doctrines about which there is most controversy or disagreement. It is, however, a notable effort to face some of those problems which have been largely caused by the impact of modern knowledge on the expression of doctrine. It follows the modern Anglican tendency to emphasize the Greek patristic tradition in preference to Augustine and the North African school and is thus better able to synthesize theology and modern thought. It is marked by a spirit of tolerance and charity; but it has had a mixed reception and received many hasty judgments which a more careful reading would have avoided. It has more than a domestic importance for the Church of England, and appreciation of this was shown by the sympathetic welcome given to it by the Free Churches. It must not be regarded as an authoritative statement of what the Church of England believes, though it may be a preliminary to one. The unsatisfactoriness of the XXXIX Articles as a theological statement has long been realized, and the Dean of St. Paul's, both in Convocation and at the Church Congress, pressed for their revision or for a more adequate statement, and more is likely to be heard of this.

In the U S A., "fundamentalism" does not seem to be so strong as it was, but the "theology of crisis" is being made more widely known through Paul Tillich of the Union Theological Seminary and Emil Brunner himself, who is now at Princeton, and its influence is likely to grow. A very different but equally important point of view is represented in the religious philosophies of E. S. Ames and H. N. Wieman.

Generally speaking, it would seem that the more conservative Catholic traditions are now showing more liberal tendencies, whereas the former liberal traditions of Protestantism are undergoing conservative reactions.

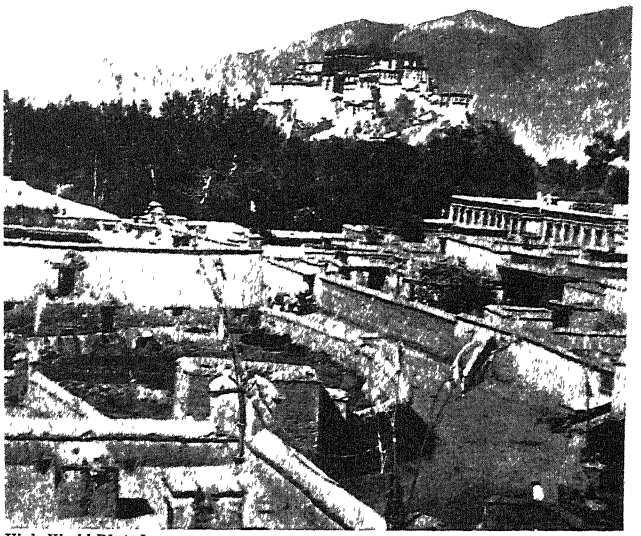
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THOMAS, HUGH LLOYD, British diplomatist and horseman, was born on April 28, 1888, and died on Feb. 22, 1938. He was educated at Eton and New College, Oxford, and entered the diplomatic service in 1912. He held appointments successively in Constantinople, Rome, and Madrid, was private secretary to the Foreign Secretary, Sir Austen Chamberlain, from 1924 to 1929, went with the Duke of Gloucester to Japan in 1929, and was the Prince of Wales's assistant private secretary from 1929 to 1935. From 1935 until his death he was envoy extraordinary and minister plenipotentiary in Paris. He was made a C.V.O. in 1929.

As an amateur steeplechase jockey, Lloyd Thomas was well known to all sportsmen. It was while riding his horse "Periwinkle II" in the Harrington Hunters' Steeplechase at Derby that he was thrown at the last fence and killed.

TIBET. The administration of the country during 1938 remained, at least in theory, in the hands of the regent, or Jaltseb, until his death at Lhasa in September, no new Dalai or Tashi Lamas having been identified since the deaths of the last holders of those offices in 1933 and 1937 respectively.

A struggle for power appears to be in progress between three parties: the heads of the greater monasteries and their followers, who favour the traditional policy of exclusion of foreigners and theocratic government; the "Young Party", who stand for a progressive nationalism, and,



Wide World Photos]
LHASA, TIBET. THE STREAMERS ATTACHED TO STICKS ARE INSCRIBED WITH PRAYERS AND THEIR MOVEMENT IN THE WIND IS INTERPRETED AS A REPETITION OF THE PRAYER

while upholding the old religious organization, would open the country to international trade and seek the development of its mineral wealth, and the followers of the late Tashi, or Panchen, Lama, who were exiled from Tibet when their leader fled to Mongolia after his unsuccessful attempt to gain political domination, and are now seeking readmission to the country on the pretext that they wish to convey his body to its final resting-place. The military forces are alleged to favour the first group, but the party of the late Tashi Lama are seeking to gain them over. Until one of these groups has gained a definite ascendancy, it seems unlikely that new occupants of the Dalai and Tashi Lamaships will be recognized.

See J. Hanbury-Tracy, *Black River of Tibet*, London, 1938.

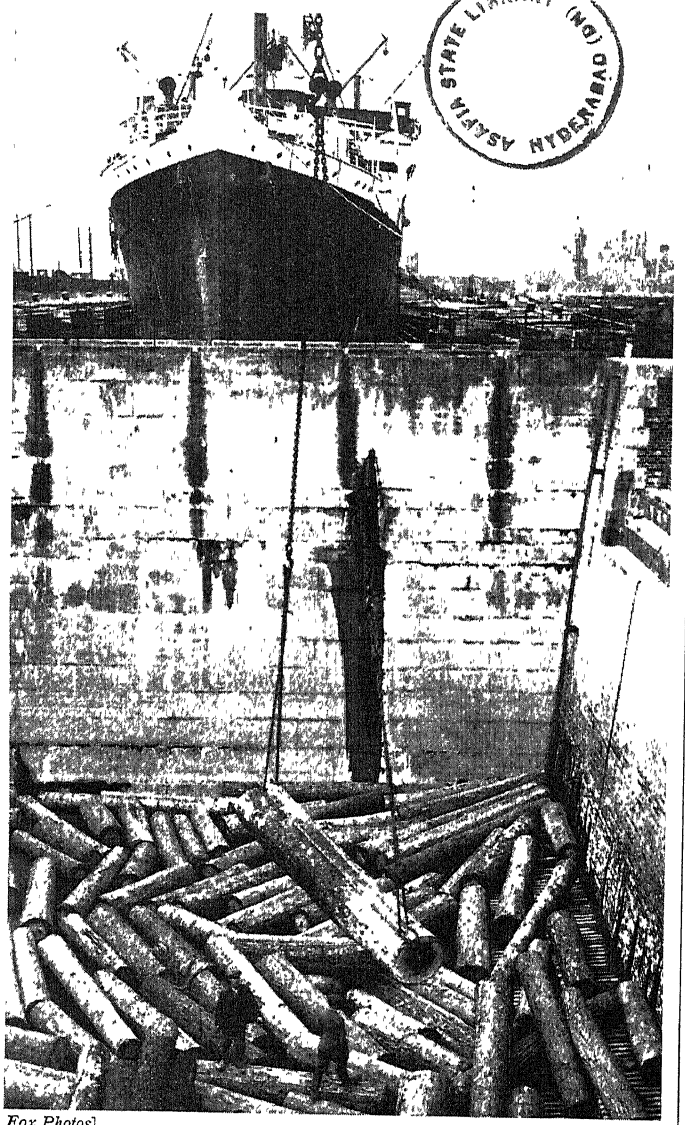
TIMBER. For the European timber trade, 1938 was a most difficult year. It was preceded, in 1937, by speculation, extraordinarily heavy buying, and rapidly increasing prices. Trade figures for the United Kingdom—the leading buying country—showed imports of wood and timber in 1937 to have totalled £61,772,285, compared with £43,516,879 in 1936. The imports in 1937 were in value the highest on record, except for the years immediately following the War. United Kingdom timber imports in 1938 were valued at £42,900,021.

The year 1938 began with importers and merchants burdened with huge stocks bought at high prices and with shippers in Scandinavia and elsewhere carrying exceedingly large balances of unsold sawn goods, and faced with high prices for fresh logs for conversion. It was recognized when the year commenced that supplies of wood in the different countries were together much above the probable requirements of the market.

The course of the market was a steadily falling one until August, when the low water-mark was reached. Then the market began to steady, supplies having become more normal.

The European Timber Exporters' Convention, which aims by means of the export quota system at aligning supply and demand, passed through a severe testing time. The Convention had decided on a 10 per cent reduction in the European softwood export quota for 1938, giving a figure of 3,600,000 standards, compared with 4 million standards in

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Fox Photos]
"PICKLING" TIMBER AT TILBURY. BEECH AND BIRCH TRUNKS ARE LOWERED INTO A DRY DOCK BELOW THE RIVER LEVEL, WHERE THEY ARE LEFT TO SOAK AND SEASON

1937. Readjustments were found necessary later, a further reduction being made in Jan. 1938, to 3,420,000 standards, and another reduction in August bringing the figure to 3,165,000 standards. Changes in Europe during the year have reduced the number of member countries in the European Timber Exporters' Convention to seven, Austria and Czechoslovakia having withdrawn. By the frontier changes Germany has greatly increased her areas of forest lands, and certain changed directions of export trade have followed. The European Timber Exporters' Convention export quotas for 1939 are 2,903,200 standards.

The hardwood trade had a bad year too. Here again there was an excessive carry over from the previous year. Consuming industries, particularly the furniture trade, have had long periods of quietness. Some idea of the trend may be gathered from the fact that United Kingdom imports of oak lumber in the first eleven months of 1938 totalled only £1,665,178 as against £2,726,465 in the same period of 1937. War scares, seasonal slackness accentuated by general unsettlement, and the Japanese and European political situations have all contributed to the adverse effect on business.

Private housebuilding passed the peak. In some parts of the country housing developments are still very active, however, and in Scotland particularly, schemes for erection of considerable numbers of all-timber houses have been completed, and others are in prospect. The timber-house idea is new in Great Britain and is spreading.

The Canadian lumber industry maintained its export business with some of the leading buying countries fairly well in 1938, but domestic trade in the Dominion did not come up to expectation. British Columbia shippers found considerable encouragement in overseas demands and shipments to Australia during September exceeded 23 million feet, board measure, the highest monthly total to that market on record. South Africa bought well too, and the demand from the British West Indies was in the autumn quite good. On the other hand, the loss of the Orient trade, due to the disturbances there, has been severely felt.

An outstanding event of the year was the conclusion of the Anglo-American Trade Treaty and the Canadian-United States Trade Treaty. Under the former, the United States lumber shippers are given opportunity for a wider entry to the United Kingdom with certain classes of wood goods, but United Kingdom importers object to various rates of duty on goods of different values, and on this made representations to the government, which were still receiving attention at the end of the year. Under the Canadian Agreement with the United States there is abolished a comparatively recently-imposed regulation requiring Canadian lumber products exported to the United States to be marked with country of origin; the discriminating quantity quota on exports to the United States of Douglas fir and Western hemlock is removed; and free entry is afforded for a larger quantity of shingles than was previously permitted. If the United States should abolish the import excise tax on Canadian lumber imported into the States, Canada would enjoy still further facilities for export to that market, and the American lumber shippers on their part would, by the terms of the agreement, gain still better opportunity to compete for a larger share of the business with the United Kingdom. (N. F.)

Timber production in 1938 in the United States was estimated to have reached a figure of about 20,000 million board feet, a considerable drop from the production in 1937 of 24,000 million board feet and far below the normal of from 25,000 million to 30,000 million board feet, but well above the low level of 10,000 million board feet in 1932. The principal producing regions continue to be the Pacific Coast region, and the South. The price structure maintained during 1937 receded during 1938. Some of the year's notable developments were the increased fabrication of materials into useful commodities at the sources of production (sawmills); the development of selective logging due to improved machinery, and the development by the timber industry of the possibilities of modern small homes at low cost through the National Small Homes demonstrations. The Sino-Japanese war continued to cut off important exports to oriental destinations; and there has been a very serious loss of exports to the United Kingdom. (*See* also FORESTRY AND REFORESTATION.)

TIN. In 1937 world tin production increased 17 per cent over 1936 and 9 per cent over the high point of 1929, to 211,000 long tons. All the major producing countries showed material increases over both 1936 and 1929, with the exception of Bolivia; most of the intermediate producers, with outputs of 1,000–10,000 tons, likewise shared in the increase, but many of the minor producers showed little or no improvement. Partial figures

for 1938 indicate a reduction in world output to about the 1936 level, with Bolivia increasing, Malaya, Dutch East Indies, and Nigeria decreasing, and no material change in China and Siam. The accompanying table gives the details of output for the leading producers, accounting for 86 per cent of the total

World Production of Tin

(Long tons)

	1929	1933	1935	1936	1937
Bolivia . .	43,300	14,700	25,000	24,100	25,100
China . .	6,800	9,500	9,000	11,100	12,900
Dutch E. Indies	35,200	12,600	20,100	30,800	39,800
Malaya . .	69,400	24,900	42,300	66,800	77,500
Nigeria . .	10,700	3,800	6,600	9,700	10,400
Siam .	10,500	10,300	9,800	12,700	16,400
World Total	193,000	90,000	136,000	181,000	211,000

British Empire production of tin covers nearly one-half of the world total, but in Great Britain itself the output is only about 2,000 tons annually; apart from the main sources in Malaya and Nigeria, other British territory in Africa produces about 1,600 tons, Australia 3,600 tons, and Burma 4,600 tons.

Although the United States has no appreciable tin output, the country is the world's largest consumer, having during the past 25 years imported amounts averaging 46 per cent of the world output, and in addition has supplemented these imports with secondary tin recovered from previous use, to the extent of 35 per cent of the amount of new metal used. In 1938, imports declined sharply from the record level of 88,000 tons in 1937, the total for the first 10 months being only 41,700 tons.

A tin "buffer pool" was inaugurated in London in June 1938, by the International Tin Committee, for the purpose of maintaining the price of the metal between £200 and £230. (G. A. Ro.)

TOBACCO. World tobacco production in 1938 was generally below 1937 in the principal tobacco-growing countries, except Canada and Manchukuo. The Canadian crop was 85,142,000 lb., compared with 71,459,000 in 1937; Manchukuo, 12,500,000 lb. in 1938 and 5,282,000 in 1937. The most drastic reduction was in China where the Sino-Japanese war had overrun the tobacco-growing area. The 1937 Chinese crop was 210 million lb. That of 1938 was roughly estimated by the Shanghai office of the U.S. Foreign Agricultural Service as 81 million lb. In the United States production of all types of tobacco in 1938 was estimated at 1,455,970,000 lb., or 6·2 per cent below the 1937 crop of 1,552,601,000. Production in other countries in 1938 was as follows, figures in parentheses being for 1937: Turkey 134,908,000 lb. (140,886,000); Hungary 90,961,000 lb. (94,631,000); Greece 84,943,000 lb. (141,441,000); Japan 82,719,000 lb. (74,174,000); Bulgaria 44,093,000 lb. (69,055,000); Argentina 17,223,887 lb. (23,113,908). The heavy reduction in Argentina was owing to unfavourable weather and also to severe insect damage. Foreign-seed types of tobacco are increasing rapidly in Argentina in contrast to native types. (*See* also Cigars and Cigarettes.)

TOGOLAND. The division of the former German Colony of Togoland between the British and the French, who now administer the territory under mandates, involved the separation of the Ewe peoples and caused considerable discontent in earlier days. At present the British area is administered as an integral part of the Gold Coast, and a policy of forming a more effective native administration by the amalgamation of tribal units is followed, but the absence of direct taxation provides difficulties. Since 1936 the French area has been reorganized with a separate administration from French West Africa, but remains under the Governor-General of that Colony. In both areas the cocoa trade is of first importance. (J. L. K.)

The British Mandate has an area of 13,040 sq. miles and a population (1931) of 293,670. Statistical returns are included in those of the Gold Coast (*q v.*).

The French Mandate

Area and Population:
Area 20,000 sq. miles.
Population (est. Dec. 31, 1936) 740,000 (Europeans, 418).
Chief Town. Lomé (cap. 10,000).
Administrator-Superior. M. Montanié.
Production 1937:

Maize (export)	15,922 metric tons
Cocoa (export)	8,071 ,, ,,
Palm oil (export)	1,700 ,, ,,
Palm kernels (oil content, export) (1936)	9,700 ,, ,,
Copra (export)	3,648 ,, ,,
Ground nuts (1936)	6,000 ,, ,,
Cotton (export)	1,636 ,, ,,

Overseas Trade 1937:

Imports	78,170,000 francs
Exports	75,554,500 ,,

Communications 1937:

Roads	2,175 miles
Railways	274 ,,

Finance 1938:

Revenue, local (est.)	38,996,700 francs
Expenditure, ordinary (est.)	35,496,700 ,,
,, extraordinary (est.)	3,500,000 ,,

TOKYO, capital of Japan, population (1936) 6,085,800; area 257 sq. miles. Tokyo took its place among the most populous capitals of the world when it was greatly enlarged by the amalgamation of a large suburban area with the city in Oct. 1932. Twenty new wards were added to the original fifteen. Tokyo is served by an extensive system of tramcars, buses, and city railways. An underground railway is under construction and the part which has already been completed serves a section of the central districts of the city. A further section was opened for traffic in the autumn of 1938. The city was selected as the site of the Olympic Games in 1940, but in July 1938 the Japanese government decided to give up the holding of the Games on account of the uncertain outlook in connexion with the continuation of the war in China.

TONSILLITIS: *see* Ear, Nose, and Throat, Diseases of.

TORONTO, with a population of 647,803 (1938) and an area of 34 sq. miles, is the second largest city of Canada and capital of the province of Ontario. Its 2,627 manufacturing establishments produce annually goods to the value of $360 millions. Conveniently situated on the line dividing the population of Canada as between east and west, Toronto has become an important centre of distribution of goods to the province of Ontario, the most populous of the Canadian provinces, and to the rest of the Dominion. In bank clearings and postal revenue it leads all other cities in the Dominion. There are ten collegiate institutes, four technical schools, four high schools of commerce, and 160 public schools, besides 39 separate schools and a large number of private educational establishments. The University of Toronto, with 7,408 students, is said to be the largest university in the British Empire.

The corporation of the city of Toronto owns the street railway and motor-bus transportation, the waterworks



Aerofilms]
WYTHENSHAWE ESTATE, MANCHESTER, TO BE DEVELOPED AS A SATELLITE TOWN OF ABOUT 25,000 HOUSES, WITH PLANNED COMMUNICATIONS AND FACTORY SITES, SURROUNDED BY AN AGRICULTURAL BELT

system, and the local hydro-electric system, which has exclusive distribution of electricity for light, heat, and power. There are 106 parks and playgrounds, with a total area of 2,243 acres. Toronto's imposing harbour is in the hands of a public commission. The Canadian National Exhibition, now in its 61st year, is a great annual fair attracting, in 1938, an attendance of 1,656,000 persons. The well-known Royal Winter Fair with its agricultural, livestock, and horse show is also held annually. (G. R. G.)

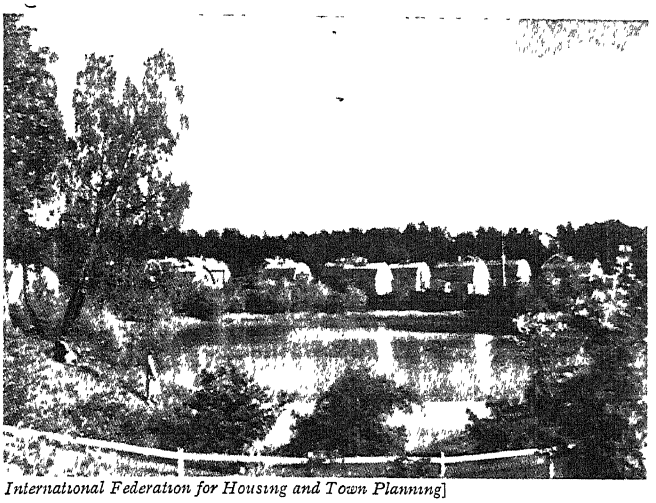
TOWN AND COUNTRY PLANNING. The relationship of town and country planning to defence against air attack was the most challenging and most discussed problem of 1938. This discussion had been in progress before the autumn, but the tempo of the discussion was greatly accelerated by the international crisis. Every European country was alive to the danger, and at once it was clearly seen that the mere mass of the big towns, and particularly the capital cities, constituted a menacing strategical weakness. The virtues of decentralization, long urged by the most advanced town planners for purely sociological reasons, received additional corroboration. According to Schoszberger, "The country with the largest number of large towns is the most exposed to the danger of air attack. Of all European countries, England stands first on the danger list, and Germany second". In Germany 46·6 per cent and in England 49 per cent of the population live in towns of over 100,000 inhabitants. The Bressey-Lutyens Report—which aroused interest as the presentation of a far-reaching traffic plan for London—pointed out that one-fifth of the total population of Great Britain live within the London Transport area. What this means is graphically illustrated when put in the form—20 per cent of the population of England and Wales live in 1 per cent of the area of the country.

These conurbations constitute a grave menace in themselves. The menace is made more acute when it is remembered that nearly all large towns have within them areas of dense concentration of population. Berlin, for example, has areas where the people crowd 160 to the acre; in the metropolitan borough of Southwark the density is 147 per acre. In new blocks of flats there is a concentration of 200 and more per acre.

Town planners and governments would have faced an insoluble dilemma if the conditions required for defence against air attack in wartime and those required for healthy and happy living in peacetime were different or opposed. The dilemma was seen to be more easy resolved, however, when it became clear that exactly the conditions calculated to produce the healthiest and happiest population were those required for maximum defence against the threat from the air. On June 14, 1938, work was begun in Berlin on the *Auflockerung* of the city—a scheme whereby dense development is to be replaced by more open development. Herr Albert Speer, general building inspector for Berlin, declared:

"Our population policy demands that all citizens should have sufficient space to breed healthy children. The necessary reorganization of the old city will have as its object the *Auflockerung* (loosening up) of the population in the inner city. Whereas in certain districts there are to-day still 400 people per hectare (2½ acres), in future there must not be more than 150 per hectare."

Similar declarations have been made on behalf of many European governments. A consideration of the literature



International Federation for Housing and Town Planning]
GARDEN CITY, STOCKHOLM

and plans of governmental authorities brings out this basic conclusion as the starting-point for defence plans: that danger is in direct ratio to concentration of buildings and population, and that danger decreases proportionately as density decreases. In England, town planners are almost unanimously agreed on a four-point programme which they desire to be made effective at once.

(1) A complete ban on the peripheral or vertical expansion of all large towns and cities.

(2) The planning of all future development in satellite towns of low density.

(3) The provision of real green belts round every big town.

(4) Until measures of large-scale re-planning are envisaged for each of the large towns, all congested areas cleared of slums or other property to be left as open spaces.

Considerations such as these, it is believed, will have a determining effect on the Report of the Royal Commission on the Geographical Distribution of the Industrial Population, the early issue of which is now expected. The views of this commission are likely to fix the line of British town planning policy for many decades to come and will not be without their profound influence on town planning opinion throughout the world.

The evidence submitted to this commission constitutes the most important collection of basic material for town planners ever gathered together; special importance attaches to the evidence submitted to the commission by the Garden Cities and Town Planning Association, and to the evidence of the Town Planning Institute. The evidence of these two bodies tended to the same conclusion, namely that a National Planning Authority is an essential of positive planning.

Special interest attached to the Sixteenth Congress of the International Federation of Housing and Town Planning, held at Mexico City in Aug. 1938, presided over by Mr. G. L. Pepler of Great Britain. Reports from many countries on planning for recreation showed that most countries were becoming alive to the need for greater provision of open spaces, particularly in urban areas. Czechoslovakia reported that in the planning scheme for Greater Prague, 27 per cent of the whole area is devoted to green zones, public parks, and reservations. Italy made special reference to the model new towns recently created in connexion with the large areas reclaimed from marshes and restored to cultivation. Professor Patrick Abercrombie's plan for Haifa Bay, Palestine, in which a green belt separates the residential quarter from the industrial district, aroused interest. A striking recent development in the United States is the city-owned park for recreation outside the city limits. The latest figures show a total of 299 cities with 514 outside parks, with a gross acreage of 129,941, or an average per park of 253 acres.

Continued interest is taken in the accomplishment of the Tennessee Valley Authority (*q.v.*), created by an Act of Congress in 1933, which has under its control an area of some 26 million acres (equivalent to seventy per cent of the total area of England and Wales). Among the experiments of particular interest to planners are the development of large park reserves, the construction of a "freeway" from Knoxville to Norris, a distance of 22 miles, and the construction of the town of Norris. This town, on a beautiful wooded, hilly site, is designed to accommodate a given population, and will be complete with all the amenities for a full life for its citizens.

The Howard Memorial Medal (which has been called "the Nobel Prize of the Town Planning world") was awarded in 1938 to Sir Raymond Unwin, in recognition of his services to planning and to the garden cities movement in particular. Sir Raymond, who is a past-president of the Royal Institute of British Architects and of the Town Planning Institute, not only carries on his work as a consultant in England, but lectures at Columbia University.

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TRADE, BALANCE OF: *see* BALANCE OF TRADE.

TRADE AGREEMENTS. The year 1938 was marked by the completion of the Anglo-American Trade Agreement which, with the companion U.S.A.-Canada Agreement, is one of the most important pacts ever made between two countries, affecting as it does about two-fifths of the world's trade. Negotiations had been in progress for a considerable time before the agreement was finally signed at Washington on Nov. 17. It entered into effect thirty days after the exchange of the King's ratification and the President's proclamation, and will remain in force until Dec. 31, 1941. After that it may be terminated at six months' notice by either side. Article 18, however, permits termination should a wide variation occur in the exchange rate between the dollar and sterling, but Article 19 allows the withdrawal of any concession should it have benefited a third party, and damaged American or British producers of the article in question. Provisions are also included to deal with dumping and export subsidies, following mutual consultation. The agreement applies to the United Kingdom, Newfoundland, British colonies, protectorates, and mandated territories, and on the other side the United States and such possessions as are included in her customs territory at the signing of the agreement. Most-favoured-nation treatment is accorded in respect of import and export duties, customs rules and formalities, various prohibitions and restrictions (with exceptions). National treatment is accorded in internal taxation of goods. Concessions granted by the United Kingdom to the U.S.A. cover about two-thirds of American export trade to the United Kingdom, of which eleven per cent benefits from duty reductions, fifteen per cent is covered by agreements not to increase duties, 22 per cent continues to enter free, and seventeen per cent enjoys other concessions. The maintenance-of-duties group

includes motor-cars of more than 25 h.p , agricultural and other machinery, cheap cotton dresses, and celluloid. For unmanufactured tobacco, it is agreed not to increase the present Imperial preference of 2s. a lb. The continued-duty-free group includes certain raw materials, such as raw cotton, sulphur, and fur skins Duty reductions cover more than £10 millions of the 1936 trade. With the agreement of India, Australia, and Canada, the duty of 2s. a quarter on wheat is abolished. Important concessions are made on soft wood, apples, and pears. On manufactured goods the reduction is mostly from twenty to fifteen per cent, and covers, among other things, machinery, electrical goods, silk stockings, boots and shoes Newfoundland's concessions and the position of the colonies are set out in separate sections American concessions cover £27 millions out of the £40 millions imported from Great Britain in 1936, and affect 600 separate items. Principal reductions of duty cover cotton goods, wool and linen manufactures, and other textiles ; earthenware, china and glass, machinery, food-stuffs, leather goods, books, toys, dressed furs, gramophone records, etc. The stabilization of the duty on whisky, the largest single item of trade, is of great importance. A parallel agreement governing the trade relations of the United States and Canada, complicated by contiguity and by the modifications already made in the Ottawa Agreements, was signed at the same time.

Another pact of major importance was concluded in April between the United Kingdom and Eire. Under this, special duties arising out of the dispute over land annuities were removed on either side; Irish goods of those classes which were allowed free into the United Kingdom from other parts of the British Commonwealth under the 1932 tariff and the Ottawa Agreements were restored to the free list. Irish duties were removed from horses, preserved fish, hops, store and clayware, glassware not domestic or illuminating, pig-iron, various metal goods, medical and photographic instruments, agricultural and textile machinery, wool, oils, acids, etc. The duties on various agricultural goods were reduced, and also those on textiles, boots, confectionery, etc.

For the rest a large number of smaller agreements was made during 1938. The United States continued her liberal trade policy with an agreement in March with Czechoslovakia. Most-favoured-nation treatment was mutually conceded, and Czech import duties were lowered on fruits, salmon, oils, refrigerators, cars, typewriters, etc. ; while American duties were lowered on glassware, certain cotton goods, flax, beads and buttons, shoes, gloves, etc. The most-favoured-nation agreement of the United States with Venezuela in May and with Ecuador in August furthered her trade policy on the American continent. Venezuela also concluded a most-favoured-nation agreement with Norway (April), and Ecuador with Czechoslovakia (January), Italy (September), and France (November).

Within the British Empire, India and South Africa signed a mutual most-favoured-nation agreement in March, and in October Canada and New Zealand prolonged the 1932 Ottawa Agreement until 1939. New Zealand also signed an agreement with the Netherlands in January and in May with Switzerland, with qualified mutual most-favoured-nation treatment. In February the provisional agreements standing between Egypt and the United Kingdom and between Egypt and Eire were prolonged for one year.

In March France concluded an important agreement with Argentina, which included, besides mutual most-favoured-nation treatment, a guarantee by France of her import quotas of maize, apples, pears, frozen and preserved meat, butter, etc. During July France signed an agreement with the United Kingdom concerning trade with French Morocco

Japan renewed the 1912 trade treaty with Italy, and reached an agreement with Siam. Siam also signed agreements with Germany, Belgium, Switzerland, the Netherlands, following agreements with Norway, Denmark, and the United Kingdom at the end of 1937.

Less important agreements by the United Kingdom include a supplement to the 1936 agreement with Turkey (May), an exchange of notes with Chile (May), an amendment to the 1934 payments agreement with Germany (July), a new payments agreement with Rumania (September). Other agreements not listed include Latvia-Greece, Italy-Afghanistan, Government Spain-Turkey, Germany-Poland, Portugal-Greece, Hungary-Iran, Belgium-Yemen, Australia-Switzerland. (D. M. H.)

TRADES UNION CONGRESS. The seventieth anniversary of the British T U.C. in 1938 reflected the highest membership the trade unions have yet reached, with the exception of the inflation of the War period. The affiliated unions totalled 216, with an aggregate membership of approximately 5,000,000.

Special attention was focused during 1938 on questions of trade union organization concerning workers in domestic service and the catering trades, non-manual workers, and young workers in general. Efforts to protect young people from long hours of labour were successful in securing the regulation on a 48-hour weekly basis of more than 100,000 young persons engaged in industry.

With the co-operation of the British Medical Association on a joint committee, the workers' needs in the sphere of safety, health, and welfare received increasing attention. Effect was given to the suggestion for associating science more closely with social interest by the setting up of a scientific advisory council on which distinguished scientists are represented along with the T.U.C. Efforts made to increase payments to the unemployed were partly met by the government authorizing a discretionary allowance during the winter months.

T.U.C. educational work included the granting of scholarships for workers, and the T.U.C. also acted as one of the nominating bodies for travelling studentships offered by the



Daily Herald]
THE PRESIDENT'S ADDRESS AT THE OPENING OF THE 70TH ANNUAL TRADES UNION CONGRESS AT BLACKPOOL

Imperial Relations Trust. A campaign was conducted critical of the exemption clauses of the Education Act of 1936.

Other subjects which engaged the attention of the T.U.C. during 1938 included trade union and labour problems in the colonies; holidays with pay, rents in relation to incomes; reorganization of electricity distribution, compensation for loss of employment; industrial location; fair wages clause; employment of juveniles.

T.U.C. representatives have served on government and other bodies including the Royal Commission on the Geographical Distribution of the Industrial population, Coalmines National Industrial Board, Transport Advisory Council; and the Home Office Committee on Lighting in Factories and Workshops.

The general council met the government, at the latter's request, on the questions of acceleration of the rearmament programme, A.R.P. in industrial establishments, and the national service scheme.

The annual congress, held in Blackpool, met in the atmosphere of the Czechoslovak crisis. A pronouncement was made reaffirming the international principles held by the movement, and calling for a positive and unmistakable lead for collective defence against aggression, and to safeguard peace.

Practical sympathy was shown with the acute position of racial, religious, and political refugees by supporting a suggestion that, subject to certain safeguards, a number of such refugees should be permitted to establish themselves in Great Britain.

The discussions at Blackpool were, however, primarily concerned with the interests of the organized workers and the welfare of the wage-earning class. Unemployment, freedom of association, the forty-hour week, the obligations of foreign firms in Great Britain, amendment of workmen's compensation, unemployment insurance and factory legislation, the cost of living, conditions in agriculture, the establishment of trade boards in the grocery trade, are an indication of the range of domestic problems with which the T.U.C. were concerned. (W. M. Cr.)

TRADE UNIONS. Membership of trade unions in most countries at the beginning of 1938 was considerably greater than a year earlier, the increase which began several years ago with recovery from the trade depression having been continued. Such figures as are available show further increases during 1938, but statistics are still inadequate to show how much the trend was affected during the latter part of the year by recession of trade and increased unemployment in various countries. Wages, hours of work, and holidays with pay have attracted chief attention, and demands have been made for more economic planning and for measures to reduce unemployment. Consideration has been given to the international situation.

Britain and British Dominions. At the beginning of 1938, statistics of British trade unionism showed a total membership of 5,851,000, which was over half a million, *i.e.* 10·3 per cent, more than a year earlier. The membership of organizations affiliated with the Trades Union Congress grew during the same period from just over 4,000,000 to 4,460,000. This increase in membership, the biggest in any year since 1919, was most marked in the pottery and glass, metal, engineering, shipbuilding, and clothing industries, and in transport and general labour (excluding railways). The total number of unions was 1,033, but nearly one half of the total membership was concentrated in twelve unions. The accumulated funds of registered trade unions was £18,141,000. Income in 1937 totalled £10,320,000, including £8,387,000 from members, and £1,221,000 from the Ministry of Labour for unemployment insurance benefits and administration. The chief items of expenditure in 1937 were £1,708,000 for unemployment benefits, £1,115,000 for superannuation, £3,200,000 for working expenses, £1,042,000 for sick, accident, and funeral benefits, and £336,000 for dispute benefits.

There were no major disputes during 1938, and the total number of working days lost owing to disputes during the entire twelve months was only 1,335,000, compared with 3,413,000 during the corresponding period of 1937. The general trend of wage rates continued upwards during the first half of 1938 but subsequently there were slight declines. There were further extensions of holidays with pay during the year.

The movement also gave attention to the coming into operation of the new Factories Act in July 1938; demanded amendments of the legislation on Workmen's Compensation and systematic economic planning; and adopted a charter for youth, which included prohibition of overtime and night work and measures to abolish blind-alley occupations. The T.U.C. decisively rejected any suggestion that increased expenditure on rearmament should involve curtailment of the social services and strongly supported the voluntary principle for national service schemes.

Among British Dominions, Australia showed little change in membership at the beginning of 1938 compared with 1937, while in all other Dominions there were increases ranging up to about twenty per cent. In India the combined membership of the All India Trades Union Congress and the National Trades Union Federation was little more than 250,000. The movements in Canada, Australia, and New Zealand were all interested in social security, and in the last two countries legislation on this subject was enacted during 1938. In New Zealand, the trade unions played a big part in securing the return of the Labour government at the 1938 general election. Both in Canada and Australia the movement demanded measures to ensure increased competence for the Federal governments to enact social and labour legislation applicable throughout the country.

Other Countries. "Free" trade unions are strong in France, Belgium, the Netherlands, Poland, and the Scandinavian countries, and Christian trade unions in the four first-mentioned. In all these countries, membership was greater at the beginning of 1938 than a year earlier, the increases ranging from two or three per cent in Switzerland and Belgium to more than twenty per cent in Norway. France had the largest membership, that of the Confédération Générale du Travail being 5,340,000, and the Confederation of Christian Trade Unions 487,539. Among the demands made by the C.G.T. at its Congress in November 1938 were recognition of the right of association for all workers, including civil servants; compulsory establishment of collective agreements, which should be national; and regulation of engagement and dismissal of workpeople. The year 1938 saw considerable unrest in France over differences in policy between the government and the trade unions, particularly on the forty-hour week. There was a recurrence of stay-in strikes, and the struggle culminated on Nov. 26, when, the government having announced decrees greatly increasing the elasticity of application of the forty-hour week and dealing with other economic and social questions, the C.G.T. called a general strike. This demonstration was unsuccessful owing to strong action by the government.

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The Scandinavian trade union movements, with a combined membership of about 1½ millions, continued their collaboration, and favoured gaining the forty-hour week by stages, both as regards number of hours and industries covered, so as to avoid difficulties which would result from its sudden introduction. In Sweden a wage policy was supported which would assist, in the first place, the lowest group of workers. A decision was taken by the Norwegian movement to create a fund for the establishment of workers' colleges.

Systems of trade unionism under the auspices of the state continued numerically strongest in Italy and the U.S.S.R. Membership of the Soviet trade unions totalled about 23 millions in April 1938 Measures were taken with a view to making the movement more democratic by election of officials by secret ballot. Wage systems in operation were critized as not imposing on the workers a sufficiently binding obligation to increase their output. In Italy the Fascist trade unions had a membership of 5,901,467 at the beginning of 1938, this being about 640,000 more than a year earlier. State or totalitarian trade unionism was maintained in Bulgaria, Latvia, and Portugal, while in Rumania the former "free" trade union system was replaced, in accordance with legislation in Oct. 1938, by a corporative system. The Austrian trade union movement was suppressed and the "labour front" introduced following the *Anschluss*; and after the loss of territory by Czechoslovakia and political changes in that country in the autumn, changes in the character of the trade union movement were begun, of which the final outcome is not yet known.

Japanese trade union membership decreased in 1938. Unemployment in the peace industries had been caused by mobilization and other war measures, and the government was asked to take steps, including reduction of hours and unemployment compensation, to combat or relieve unemployment, and to stabilize the relation between prices and wages by a sliding scale. The suppression of unfair profits was demanded. In making these demands the trade union movement emphasized that it was strongly patriotic. Trade union membership in Brazil was substantially lower at the beginning of 1938 than a year earlier.

International Aspects. The growth of the trade unions in many countries was reflected in an increase in membership of the International Federation of Trade Unions, which, at the time of the meeting of its general council in May 1938, affiliated organizations with over twenty million members in 26 countries. During the year the International Federation abandoned its negotiations for securing the affiliation of the Soviet trade unions, as it was unwilling to accept the conditions demanded; a minority, including the French representatives, favoured continuation of the negotiations. The Federation set up a committee of economic experts with a view to formulating a policy for preventing trade depressions. It continued along with many of the international organizations in particular industries to demand a shorter working week. The policy was supported of attempting to get a forty-hour week applied everywhere by means of a general International Labour Convention, as the method of trying to obtain conventions industry by industry was considered to have given very unsatisfactory results. Extension of holidays with pay, and ratification of International Labour Conventions were also supported. The International Federation of Christian Trade Unions, the membership of which was 1,503,037 at the beginning of 1938, or about 4·5 per cent greater than a year earlier, advocated measures for the protection and welfare of young workers and women in industry, and of the worker's family.

An important development was the holding of a congress of Latin-American trade unions in Mexico City, Sept. 1938, at which all Latin-American countries except Brazil were represented. A constitution was adopted providing for regular collaboration between Latin-American countries, and the Congress called on all Latin-American trade unions to apply for membership of the International Federation of Trade Unions, and to participate actively in the work of the International Labour Organization.

See *The I.L.O. Year Book, 1937–38*; also publications by the Ministries of Labour in various countries. (J. H. R.)

United States. The year 1938 was one of comparative quiet in labour relations. While the majority of American employers remained far from converted to the benefits of trade unionism and much of the labour policy of this period, many of the most influential of them appeared inclined to accept the prevailing trend in labour relations and to try to make it work. The reports of the President's Commission, appointed to study labour relations and the methods of industrial peace in Great Britain and Sweden, had much to do with influencing the opinion of employers and the general public on this whole question.

At its first formal convention, held in Pittsburgh, Nov. 1938, the C.I.O. adopted a constitution, changed its name from the Committee to the Congress of Industrial Organizations—in short, assumed the aspect of a permanent federation of industrial unions. Such discussion of peace with the A.F. of L. as was held at this convention made it clear that proposed peace terms would not be acceptable to that organization. Internally the C.I.O. had managed to achieve considerable solidarity, although it had failed to hold the International Ladies Garment Workers, one of its largest affiliates, within its ranks and had encountered, several times, difficult relations with the rebellious union of automobile workers. At the end of 1938, the C.I.O. claimed 34 affiliated unions, 8 organizing committees, 675 local industrial unions, and a total membership, not counting the Ladies Garment Workers, of more than 3,500,000.

Toward the enactment of a national minimum wage and a maximum hour law, the A.F. of L. and the C.I.O. took diametrically opposed positions. Throughout the year the A.F. of L. constantly attacked the decisions of the National Labor Relations Board; from the C.I.O., on the other hand, the Board has received unqualified support. In politics there was a perceptible shift in the balance of power. In the elections to local and national offices, held throughout the country in November, the C.I.O. was much less successful than the A.F. of L.

Like the C.I.O., the A.F. of L. added substantially to its membership and claimed an increase from 1937 to 1938 of close to 800,000 members. In this increase most of its 100 affiliated national unions shared, but the greatest gains were made by the largest unions, such as the Electrical Workers, the Machinists, and the Teamsters. Like the C.I.O. also, the Federation has extended its organizing activities to black-coat workers, agricultural labour, and to the professional and personal services.

Judged by the claims of these two organizations, total union membership in 1938 exceeded all previous records in the United States. The A.F. of L. and the C.I.O. together claimed more than 7 million members. If to these are added the membership of the independent railroad unions and that of the Ladies Garment Workers, the aggregate would easily reach 8 million.

All organized labour continued to profit from the activities and the decisions of the National Labor Relations Board. The most important of these involved charges against the independent steel companies, against whom the unsuccessful steel strikes of 1937 had been called; the rights of strikers to their jobs; and the legality of certain labour contracts between employers and the A.F. of L. In the steel cases, the Board found several of the companies guilty of one or another unfair practice and thus prepared the way for further organizing activities by the Steel Workers' Organizing Committee, affiliated with the C.I O. In cases involving the rights of strikers, the Board continued its policy of reinstating strikers in their jobs wherever it found the employer guilty of unfair practices which, in its opinion, had in the first instance caused the strike. In the litigation arising over the validity of A.F. of L. contracts, the Board on several occasions held such contracts to be in violation of the Labor Relations Act where it considered the arrangements with the employer to be collusive and the union making the contract not the freely chosen representative of the employees. (*See* also AMERICAN FEDERATION OF LABOR; CONGRESS OF INDUSTRIAL ORGANIZATIONS; STRIKES AND LOCKOUTS.)

See "Reports of the President's Commission on Studies of Industrial Relations in Great Britain and Sweden" (U.S. Department of Labor, Washington, D C., 1938); "Third Annual Report of the National Labor Relations Board" (U S. Government Printing Office, Washington, 1939). (L. Wo.)

TRAFFIC LAWS. In 1938, in Great Britain, besides minor regulations affecting previous legislation, the Finance Act and two new laws had a direct effect on traffic; the first-named because its raising of the duty on hydrocarbon oils from 8*d.* to 9*d.* per gallon affected practically all classes of motor vehicles with internal combustion engines.

The Road Haulage Wages Act, 1938 (*see* LEGISLATION, INDUSTRIAL), makes provision with respect to the remuneration of persons employed in connexion with the mechanical transport of goods by road, and with respect to the recommendation and making of reports, and the settlement of disputes affecting matters relating to such transport; and the Street Playgrounds Act, 1938, empowers local authorities to close streets to all or certain classes of traffic so that they can be safely used by children as playgrounds.

The select committee of the Lords that was set up in 1937 has been strengthened and is still considering the problem of lessening road accidents; and no decision regarding the registration of, and compulsory rear-lights for, cyclists has yet been announced. A new regulation of primary interest relates to the visibility of the identification marks on motor vehicles, and applies to all new vehicles registered on or after Oct. 1, 1938, and, as from Oct. 1, 1941, to every mechanically propelled vehicle. Divested of technicalities it may be expressed thus: during the hours of daylight the mark on a motor-cycle or invalid carriage must be distinguishable at a distance of 85 feet, and on all other vehicles at 106 feet; and during the hours of darkness the rear-plates of the first group must, in the absence of fog, be distinguishable at 70 feet, and of the second group at 85 feet.

Another 1938 regulation of interest, though not affecting motorists as such, is the L.P.T.B. by-law making it obligatory on persons waiting for buses, trolley buses, etc., at recognized stopping-places to form queues when six or more are present.

During the year the Ministry of Transport has been investigating the relationship of permissible loads carried in relation to the unladen weight of the vehicle, and it is probable that future legislation will restrict the loads carried to a limit decided by the manufacturers' recommendation concerning the maximum pay load that the vehicle is capable of bearing. If and when this comes into force commercial vehicles will probably have to carry plates on which is notified the laden and unladen weights, etc.

The campaign launched at the end of the year by the main-line railway companies for a "square deal" in the matter of freightage rates as between themselves and road transport will probably have an effect on the number of commercial vehicles on the road, which between 1930 and 1938 increased by over a hundred per cent.

Traffic laws within the Dominions and Colonies very largely follow the laws in operation in Great Britain, the main differences being those relating to the method of taxation and maximum permissible dimensions. An important change is taking place in India, where legislation is being provided to cover motor vehicle operation in British India. In the United States the various states fall into line as far as possible in matters affecting the construction and use of motor vehicles.

TRANSJORDAN. In 1938, as in the previous year, political interest centred on the future of Palestine (*q v.*). The Amir Abdullah was believed to have been originally not unfavourable to the proposals made in 1937 for partitioning that country, particularly as it was suggested that the Arab area should be added to Transjordan. But in May 1938 he submitted to the Palestine Partition Commission a project which did not greatly differ from those of other Arab spokesmen, except in its advocacy of the union of the two countries. There was to be an undivided State with a permanent Arab majority, remaining under British tutelage for ten years and conceding administrative autonomy to the Jewish areas, together with a limited amount of Jewish immigration. In December the Amir, in common with other Arab rulers, accepted an invitation to send representatives to London to confer on future policy in Palestine. (H. By.)

Area and Population:
Area 34,740 sq. miles.
Population *c.* 300,000.
Chief Towns: Amman (cap.); Es-Salt.

Ruler. Emir H.H. Abdullah ibn Hussein, G.C.M.G.
High Commissioner. Sir H. A. MacMichael, K.C.M.G.
Language. Arabic.
Religion. Mohammedan.

Production (export) 1937:

Fresh Fruit	889 metric tons	(£P. 10,212)
Wheat	26,475 ,, ,,	(£P. 274,656)
Wool	117 ,, ,,	(£P. 9,871)

Overseas Trade 1937:

Imports, merchandise	£P. 934,211 : Specie	£P. 4,530
Exports, ,,	£P. 510,968 : ,,	£P. 182,550
Re-exports		£P. 14,860

Communications 1938:
Roads. Progress made in asphalting the Amman–Es-Salt–Jerusalem highway.
Railways, narrow gauge . . . . 200 miles

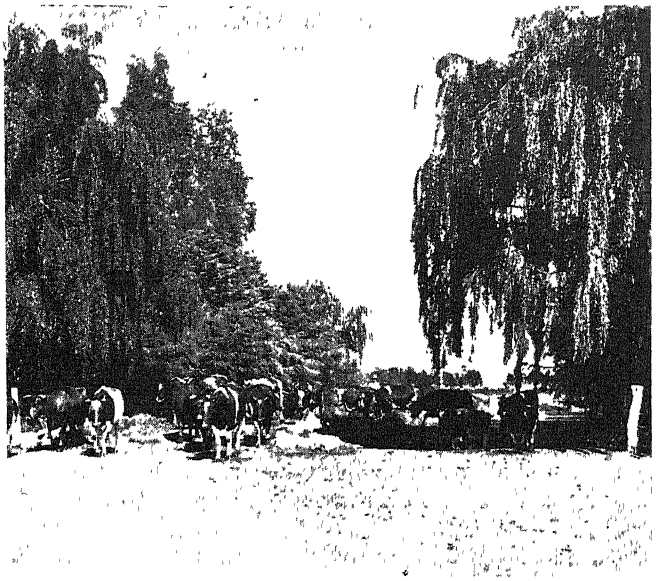
Finance:

Revenue (1937–38)	£P. 490,858
Expenditure (1937–38)	£P. 515,818
Public Debt (Dec. 31, 1937)	£P. 262,028

Education 1937–38:
Elementary, government schools 70; scholars 7,408.

TRANSVAAL, THE. Containing the rich reefs of the Witwatersrand, the Transvaal is the centre of the gold-mining industry. Much of the province is over 6,000 ft. above sea-level; there is little rain and the climate is invigorating. Besides gold mining the chief industry is cattle raising.

Recent native policy in the Transvaal has tended towards



South African Railways and Harbours]
CATTLE AT THE POTCHEFSTROOM GOVERNMENT EXPERIMENTAL FARM, TRANSVAAL

a greater use of the chiefs. Five native councils have been set up and increasing attention is paid to improving the social and economic condition of the natives. (J. L. K)

Area and Population :
Area 110,450 sq. miles.
Population (est. June 30, 1938) 3,535,100 (European 873,600).
Chief Towns (E = European pop.) Johannesburg (519,384 (E. 257,671)), Pretoria (128,621 (E. 76,935)), Germiston (79,440 (E. 32,564)), Benoni (77,760 (E. 21,071)).

Production 1937 :

Gold	11,734,553 fine oz.
Coal (tons of 2,000 lb.)	11,039,733 tons
Diamonds	128,026 metric carats (£276,101)
Cattle, number	3,153,342
Sheep, woolled, number	3,692,005

Communications and Transport March 31, 1937 :
Roads, 26,000 miles; motor services, 3,225 route miles.
Railways, government . . . . . 3,356 miles
Motor vehicles licensed (Dec. 31, 1937): cars, 23,324; buses, lorries, and vans, 4,323; cycles, 1,656.

Finance :
Revenue (1936–37) £6,032,989 (collections £3,686,726)
Expenditure (1936–37) £5,516,029

Education June 2, 1936 :
Scholars : primary classes, 128,257; secondary, 18,955.

TREVELYAN, GEORGE MACAULAY, O.M., C.B.E., LL.D., D.C.L. (1876–), regius professor of modern history at Cambridge since 1927 (*see Ency. Brit.*, vol. 22, p. 458), is a son of one historian, Sir George Otto Trevelyan, of whom he published a memoir in 1932, and great-nephew of another, Lord Macaulay. After the World War, in which he served in the British Ambulance Unit in Italy, he returned to Cambridge and continued his historical studies and his work on behalf of the Youth Hostels' Association, of which he is president, and the National Trust. His recent publications include three important works on the England of the early eighteenth century—*Blenheim* (1930), *Ramillies and the Union with Scotland* (1932), and *The Peace and the Protestant Succession* (1934); also a life of Lord Grey of Fallodon (1937), and a new edition (1937) of his *British History of the Nineteenth Century*, originally published in 1922, bringing the story to the Peace treaties of 1919. His outlook on current affairs may be illustrated by the fact that, though in no way condoning Italy's conduct over Abyssinia, he welcomed, on historical grounds, Mr. Chamberlain's "cheerful courage in taking a definite step towards reconciliation" between Great Britain and Italy early in 1938.



DR. G. M. TREVELYAN

Dr Trevelyan was awarded the C.B.E. in 1920 and the O.M. in 1930, he married in 1904 the daughter of Mr. and Mrs. Humphry Ward; she is the author of a number of works, including a *Short History of the Italian People* (1920), is chairman of the Children Play Centres Fund, and was awarded the C.H. in 1936, there are one son and one daughter.

TRINIDAD AND TOBAGO. Sir Hubert Young, appointed Governor in Jan. 1938 in succession to Sir Murchison Fletcher, arrived in June, but was taken ill while visiting Tobago and returned to England in November to recuperate. Captain Huggins, who had succeeded Mr. Nankivell as Colonial Secretary, assumed the administration.

The year was one of unexampled prosperity, largely owing to the oil royalties, which amounted to approximately $1 million. Oil exports totalled 574,955,698 gallons (a record figure) compared with 494,343,963 in 1937. A five-year development plan to cost $14 millions, including provision for public works, workers' dwellings, and aerodromes, was approved by the Legislature in November. A £2 millions loan was officially foreshadowed.

The Commission investigating the preceding June's disturbances reported in February, assigning the immediate cause to the activities of a workers' leader and stating that neither political nor racial grievances were factors. Sir James Baillie and the other members of the Oil Industry Wages Tribunal began their sittings in December.

Owing to unfavourable weather and labour disputes, sugar production (133,627 tons) was 21,000 tons less than in the two preceding years. The cocoa crop was good, and 16,741,625 lb. more were exported than in 1937. But the severe decline in prices brought great depression and the subsidy to growers was increased by $160,000.

Sir Geoffrey Evans vacated the post of Principal of the Imperial College of Tropical Agriculture in September and was succeeded by Mr. O. T. Faulkner. The deep-water harbour of Port-of-Spain, started in 1935 and costing £1,250,000, is to be opened in Aug. 1939. (A. A.)

Area and Population :
Area 1,980 sq. miles (Trinidad, 1,864 sq. miles; Tobago, 116 sq. miles).
Population (est. Dec. 31, 1937) 456,043.
Chief Towns : Port-of-Spain (cap. 76,384), San Fernando (15,587).

Governor. Maj. Sir H. W. Young, K.C.M.G.

Production 1937 : (for export)

Sugar	142,742 tons
Rum	109,860 galls.
Molasses	4,258,934 ,,
Cocoa	26,258,622 lb.
Coffee	1,752,288 ,,
Citrate of Lime	203,693 ,,
Rubber	195,648 ,,
Oranges, number	2,786,351
Petroleum, crude	2,182,000 tons
Asphalt	118,474 ,,

Overseas Trade 1937 :
Imports, merchandise . . . $35,835,514
Exports, domestic $31,530,673
Re-exports $2,171,622
Communications 1937 :
Roads, main . . 1,082 miles (430 miles surfaced)
Railways open to traffic . . . 123 miles
Finance and Banking :
Revenue : (1937) $11,792,866 , (est 1938) $11,523,749
Expenditure : (1937) $10,021,484 ; (est. 1938) $10,972,850.
Public Debt (Dec. 31, 1937) . . . $20,285,256
Notes in circulation (Dec 31, 1937) : government, $945,720 ; private banks, $1,362,515
Currency : sterling legal tender , all government accounts kept in dollars and cents ($1 = 4*s* 2*d*).
Education 1937 :
Elementary schools, 292 ; scholars, 72,776.

TRISTAN DA CUNHA. The only inhabited island of a small group of four volcanic islands in the South Atlantic Ocean, some 1,500 miles south-west of St. Helena. Roughly circular in shape, it is about seven and a half miles in diameter, and has less than 100 inhabitants. A British cruiser calls at intervals of about a year.

In 1937–38 a Norwegian scientific expedition, led by Dr. Erling Christopherson, made the first land survey of the island. Its highest point rises to a height of 6,760 ft. ; the only habitable part is a plateau in the north-west corner, five miles long by half a mile wide.

TROPICAL DISEASES. A vegetarian diet is common in hot climates, but when all sources of animal proteins, including milk and eggs, are rigidly excluded, such diets prove unsuitable for growing children, for women during pregnancy and lactation, and for active adults—especially if they are suffering from such blood-destroying diseases as malaria, ankylostomiasis, and the like. Apart from certain well-known deficiency diseases, such as pellagra and beriberi, other deficiencies are being more frequently recognized in the tropics. These include phrynoderma (toad skin), night blindness, xerophthalmia, Bitot's spots, and keratomalacia due to vitamin A deficiency, and certain pellagrous-like eruptions on exposed areas of the skin, scrotal dermatitis, geographical tongue, and angular stomatitis, which possibly result from B6 deficiency.(1)

In Macedonia, where the refugee population subsists on a diet poor in animal proteins and fats, nutritional macrocytic anæmia is widely distributed ; but here the condition is generally associated with malarial splenomegaly and evidences of concomitant blood destruction. In these patients some fundamental deficiency in the diet leads to nutritional disturbances in the cellular activity of the bone marrow with the production of enlarged and abnormal red cells which are promptly destroyed by the hypertrophied spleen. These patients require much larger doses of liver extract or autolysed yeast to improve the anæmia than do those with nutritional macrocytic anæmia uncomplicated by splenomegaly.(2)

The therapeutic value of nicotinic acid in the treatment of pellagra has been fully confirmed. After adequate dosage the alimentary features clear up, the erythematous lesions of the skin are blanched, and the porphyrin content of the urine returns to normal. In addition, the early and late mental symptoms of relapsing pellagra are benefited dramatically.(3) On the other hand, the peripheral neuritis encountered in pellagrins is cured by vitamin B1 therapy, not by nicotinic acid.

Three types of yellow fever have been recognized in Brazil—an urban type and a rural type transmitted by the tiger-banded mosquito—*Aëdes ægypti*—and jungle yellow fever, the vector of which is unknown It is the presence of the jungle type which has prevented yellow fever from being eradicated from the Americas by the effective anti-ægypti measures instituted under the ægis of the Rockefeller Foundation. Vaccination against yellow fever continues to extend. During the first nine months of 1938 over 800,000 persons were successfully vaccinated in South America without serious complications of any kind.(4) Similarly, among Europeans going to Africa, 2,500 people have recently been immunized without jaundice developing. The latter complication is now considered to have been due to the chance introduction of another virus during inoculation with yellow fever tissue culture and apparently normal human serum which gave rise to an infective hepatitis.

The possibility of immunizing man against typhus fever has been brought appreciably nearer by recent experimental work on the subject. Both human beings and monkeys treated with formolized tissue cultures of *typhus rickettsia* developed positive Weil-Felix reactions, while monkeys vaccinated at intervals of three days were found to be immune to a large infective dose of virus given two weeks after the last dose of vaccine.

For some time past clinical and epidemiological observations have suggested that the dysentery amœba (*Entamœba histolytica*) remains a somewhat inoffensive organism until its pathogenicity is enhanced by alterations in the bacterial content of the intestine. Observations are now recorded on experimentally infected kittens showing that certain bacteria enable *Entamœba histolytica* successfully to invade the intestinal wall, and that in the destructive processes involved, a bacterial element in addition to an amœbic one is implicated.(5)

Two new anti-malarial drugs have been investigated. The new compound " Cestuna ", which was reported by German observers as having a lethal action on the sexual forms of the malarial parasite comparable to plasmoquine, failed to show a true prophylactic action against experimentally induced human infections with *P. falciparum*. Similarly, prontosil, though it has some lethal action on malaria parasites, especially *P. falciparum*, has no place in the practical treatment of malaria owing to its low efficiency and relatively high cost.

The constant presence of pseudo-methæmoglobin in the plasma of severe cases of blackwater fever has been confirmed by spectrographic analysis. The same pigment has recently been synthesized from alkaline hæmatin and human serum albumin, and renamed methæmalbumin. In blackwater fever, during the katabolism of extracorpuscular hæmoglobin, hæmatin is liberated and couples with albumin to form methæmalbumin which is impervious to the kidneys.

The importance of onchocerciasis as a source of blindness has recently been recognized in parts of Africa as well as in southern Mexico and Guatemala. Clinically it is characterized by subcutaneous nodules containing adult filaria worms, the embryos of which migrate into the surrounding tissues, and if they reach the eyes, destructive lesions may result. In one village of 150 inhabitants in the north-west Congo, sixty-eight were found to have ocular disturbances due to this cause and fifteen of them were blind. Surgical excision of nodules in the vicinity of the eyes is advocated. The infection is transmitted by biting flies.—Simuliidæ.

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F. L., (1938) *Trans Roy. Soc. Trop. Med. and Hyg*, xxxii, 297; (5) Deschiens, R., (1938) *Ann. Inst. Pasteur*, lxi, 5 (N H F)

TUBERCULOSIS. Several lines of research in tuberculosis have been carried a step farther during the past year. Jensen and his co-workers in Denmark have studied the preparation, standardization, and distribution of purified tuberculin; their work should facilitate mass tuberculin-testing. Florence Seibert has continued her well-known investigations with "Pure Protein Derivative of Tuberculin" (PPD), and with the help of Swedish workers has shown that it is not "pure", but consists of a complex of substances, the main bulk of which has a molecular weight of 16,000. Work on strains of tubercle bacilli isolated from man has been continued by Jensen; this throws doubt on the reliability of present methods for differentiating between types, and suggests that the possibility of mutation of the bacillus in the human body cannot be excluded. Further experimental work has been carried out on dissociation and experimental production of immunity and hypersensitivity, and on the relation of these phenomena to production of the early lesion of pulmonary tuberculosis. The careful post-mortem investigations of Uehlinger and Blangey in Zürich, at the institution from which Naegeli published his classical paper in 1900, suggest that there is a true retardation of tuberculosis penetration (*Durchseuchung*) in the present generation. Naegeli found that between the fifteenth and eighteenth year the rate of infection rose from 50 to 96 per cent, the latter figure not being obtained by Uehlinger and Blangey until the seventieth year. Similarly, Norwegian workers have found that whereas in Oslo, in 1900, 78 per cent showed post-mortem lesions of primary infection at the age of twenty, in 1936, this figure was not reached until the age of forty. These findings have an important bearing on prevention, and are of particular interest at a time when the development of the early lesion of phthisis in the adolescent and adult is receiving increasing clinical attention, as shown by three monographs on the subject published in 1938: by Braeuning from Germany, by Malmros and Hedvall from Sweden, and by Sayé from Spain and France.

In connexion with *diagnosis*, interest continues to be shown in the possibilities of body section radiography of the chest, and various modifications of and alternatives to the original method of tomography have been suggested. The possibilities of kymography are being further explored. Culture of the sputum by the Loewenstein technique is now established as a routine diagnostic method.

Two important publications have appeared during the past year concerning the outlook for the patient suffering from phthisis. Drolet, analysing figures from the United States and England, concludes that sanatorium or surgical treatment would seem so far to have had little effect upon fatality rates when a whole population is studied. Brieger, in a report compiled for the International Union against Tuberculosis, shows that the ultimate survival rate must depend on the proportion of patients discharged sputum-negative from institutions, and that this proportion can be increased by thorough application of "combined intensive treatment", consisting of prolonged rest, collapse therapy, chrysotherapy, etc.

In regard to *treatment*, note should be taken of the increased advocacy to carry out thoracoplasties in several stages, and to perform supplementary rib resections in patients in whom cavitation persists after the primary thoracoplasty. A more cautious attitude, with insistence on narrowing the indications, is seen in regard to extra-pleural pneumothorax. The attempt to place collapse therapy in general on a more rational basis is shown in the numbers of papers published on investigation of the circulatory and respiratory functions when surgical collapse is contemplated. The year 1938 has also been marked by the publication of a very large work on collapse therapy of phthisis by Schmidt, Kremer, and Hein. Finally, the recognition of institutions as centres of active treatment is seen in the building of well-equipped hospital-sanatoria; the new institution at Sully in Wales and that at Harefield in England may be cited as examples.

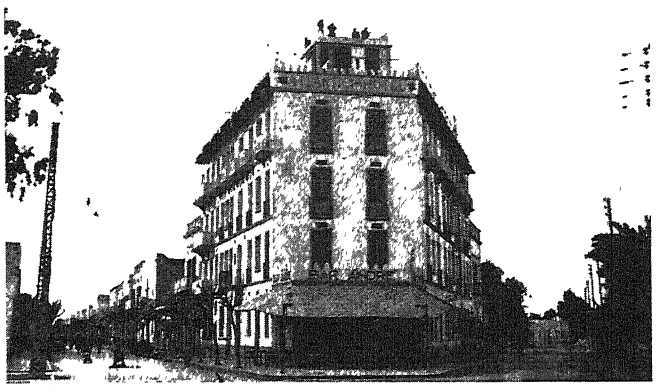
Turning to statistics, it is to be noted that in England and Wales the crude death-rates in 1937 for both respiratory (58·4 per 100,000 population) and non-respiratory tuberculosis (11·1) have shown a slight rise for the first time for several years. There has also occurred a slight increase in primary notifications (numbering 44,996 and 14,922 respectively in 1937) of both these groups. In spite of warnings uttered by such an eminent authority as Stanley Griffith, no determined attempt has yet been made to eradicate the sources of bovine infection, and much opposition has been met both in regard to advertisements issued by the British Medical Association advocating the drinking of safe milk and the proposal to introduce a Milk Bill, of which one clause concerned compulsory pasteurization. In the United States, on the other hand, the decline in mortality which was checked in 1936, has again been resumed; the total tuberculosis mortality in 1937 was 49·6 per 100,000 population, which is the lowest figure on record.

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TUNIS. The year 1938 began in unrest. The constitutional reform party, under the leadership of the lawyer Habib Bourguiba, which had collaborated with the government since June 1936, suddenly changed its attitude. Disappointed in its hopes of radical reforms and threatened by the progress of the intransigent *Vieux Destour* party, it flung itself into a policy of direct action, preaching the rejection of taxation and indulging in acts of sabotage.

The bloody disturbances at Bizerta, provoked by the exclusively native Tunisian trade union federation, but disowned by the C.G.T., led to the dissolution of the Tunisian trade unions. The closing of the Franco-Tunisian Sadiki college on March 25 as the result of a violent lecture by Professor Belhouane led to street riots, when the cry of "Give us a Tunisian parliament" was raised. On April 9 a crowd collected before the Palais de Justice, where Professor Belhouane was being interrogated, and attacked the guards, killing a policeman and stoning the soldiers. The troops opened fire and twenty were killed.

The Resident-General, M. Guillon, at once proclaimed a state of siege. On April 14 the *Néo-Destour* party was dissolved. The military authorities made mass arrests, among them Bourguiba, and many rebels were condemned.



Planet News]
LOOK-OUT POST ON THE ROOF OF THE ATLANTIC HOTEL IN THE OASIS OF GABES, THE TALLEST BUILDING IN THE TUNISIAN DESERT, TAKEN OVER AS A MILITARY HEADQUARTERS BY THE FRENCH, DEC 18, 1938

As no further trouble arose, the Resident raised the state of siege on Aug. 13.

The disturbances of April led to a series of decrees which restricted the liberty of the Press, the liberty of association, and the right of assembly. The trade unionists and extreme Left elements, whose support for the Resident had contributed to the failure of the rising, now denounced these "criminal decrees", and M. Guillon, violently attacked also by the agriculturists and Right Wing parties, was recalled. He was replaced on Oct. 24, by M. Labonne, Ambassador in Barcelona, and formerly Secretary-General at the Residency in Morocco.

The anti-Semitic measures taken in Italy weakened the powerful Fascist organization in Tunis by depriving it of its wealthiest and most enlightened elements, many of whom demanded French nationality. The Italian campaign of demands against France, let loose on Nov. 30 by Italian deputies' shouts in the Chamber for "Tunis! Corsica! Nice!" led to riots in Tunis. They also evoked manifestations of loyalty from representative groups of Tunisians, alarmed by the progress and methods of Italian colonization in Libya. The Italian claims led to the denunciation by Italy on Dec. 17 of the Laval-Mussolini agreements of Jan. 7, 1935. (C. A. J.)

Area and Population :
Area 48,800 sq. miles.
Population (est. Dec. 31, 1936) 2,630,000 (Census 1936 : French 108,068 ; Italians 94,289 ; other Europeans 10,848).
Chief Towns : Tunis (cap. 220,000) ; Sfax (43,000) ; Bizerta (26,200) ; Sousse (28,000) ; Kairouan (23,000).

Ruler. Sidi Ahmed, Bey.
Resident-General. M. Labonne.
Languages. French and Arabic.
Religion. Chiefly Mohammedan.

Production 1937 :

Wheat	480,000 metric tons
Barley	200,000 ,, ,,
Oats	28,500 ,, ,,
Maize	6,000 ,, ,,
Potatoes	6,500 ,, ,,
Olive oil	50,000 ,, ,,
Iron ore	480,000 ,, ,,
Lead, smelter output	24,800 ,, ,,
Natural phosphates	1,771,000 ,, ,,
Superphosphate of lime	44,000 ,, ,,

Overseas Trade 1936 :

Imports	1,013,608,000 francs
Exports	846,944,000 ,,

Communications 1937 :

Roads, motor	3,444 miles
Railways	1,297 ,,

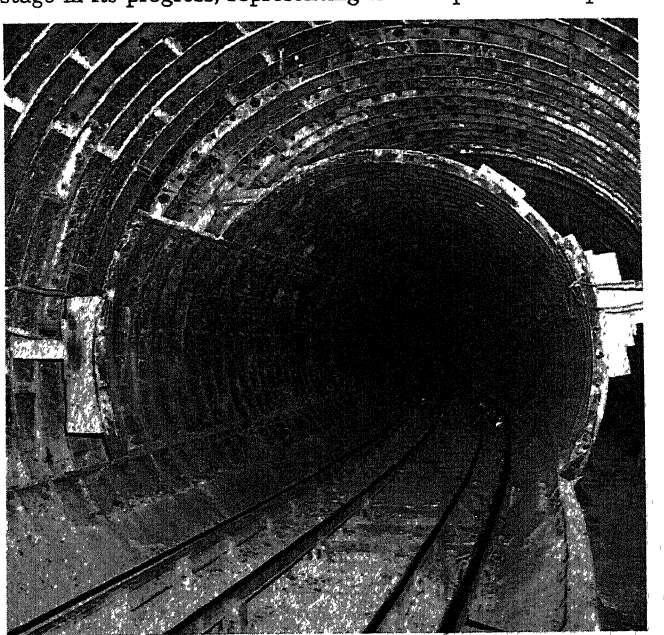
Finance and Banking :

Revenue (est 1937)	611,319,700 francs
Expenditure (est. 1937)	611,191,652 ,,

TUNNELS. During 1938 there were several signal instances of the hazards of tunnelling ; in one case fire in a high-atmosphere tunnel, another the failure of an air-lock, and another a premature explosion In the two latter cases human lives were lost. Despite experience, tunnelling, surrounded by potentially titanic forces, is not yet free from their devastating dynamic invasions.

The sciences and arts applied to tunnel design and construction have made such advances during the past thirty years that to-day, with the basic tunnelling costs of labour and materials two to three times greater, one finds that the field cost of the product in some cases is but little greater, and in exceptional cases less. These advances in driving in soft or unstable ground and rock have encouraged adoption of tunnels especially for railways, highways, and water conduits under such barriers as cities, waterways, and mountains. On the basis of the foregoing comparison of field costs certain rock tunnel schemes, completed during 1938, have surprisingly approached figures of thirty years ago.

In London, where most underground railway transit is at a great depth below street surface, another 16 miles of route, or 32 miles of tunnel, was begun in 1937. Of these new London Passenger Transport Board extensions, one branch, to the north, is practically complete while the other, eastwards, is now well in hand. An old part of the system, with about seven miles of tunnels not large enough to accommodate standard cars, was realigned and enlarged under the difficulty of doing so without interrupting railway traffic. Also in London, the construction under compressed air of another highway tunnel under the river Thames, between Purfleet and Dartford has reached an important stage in its progress, representing the completion of a pilot



The Times]
LONDON UNDERGROUND RAILWAY. THE JUNCTURE OF THE NEW TUNNEL FOR THE FINCHLEY ROAD EXTENSION WITH THE OLD TUNNEL, WHICH IS BEING DEMOLISHED WITHOUT INTERFERING WITH THE TRAIN SERVICE, SEPT. 1938

or exploratory tunnel under the river in the path of the main structure, yet to be built. A project for a tunnel under the Thames near the present Blackwall Tunnel, for southbound traffic, represents an expenditure of £3 millions It involves the demolition of a number of old houses, and the provision of new accommodation for 2,000 people.

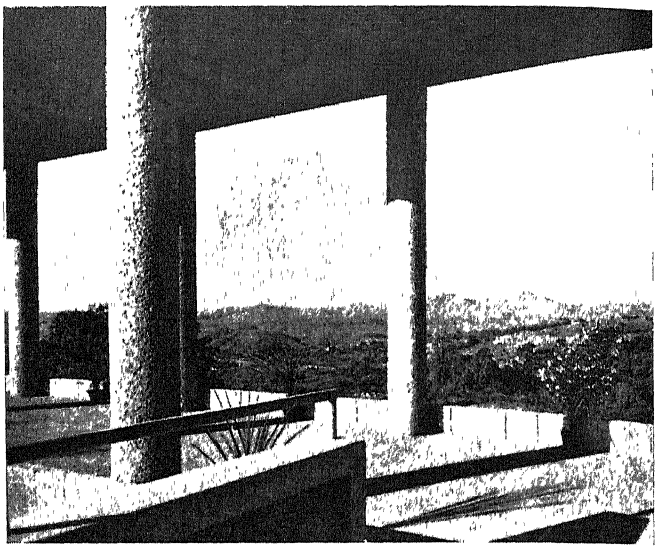
Tunnelling for traffic purposes is also going on in the two largest cities of the United States. In New York the Lincoln Highway tunnel constructed by the Port of New York Authority in the peculiar silt under the Hudson river, opened to the public on Dec. 21, 1937, was followed by an adjoining parallel tunnel " holed " through on May 2, 1938. The New York city independent subway is adding a short stretch of tunnel to its system in Sixth Avenue, in the face of geological difficulties and interfering substructures. The construction of a pair of highway tunnels by the New York Tunnel Authority under the East river between Manhattan and Queens is substantially under way.

The city government of Chicago decided to build underground a passenger transportation system in the underlying clay, a rather more plastic material than the London clay which has so greatly facilitated London's extensive tube railway system. While the original project was for rectangular box construction directly below the street surface, the final scheme puts it at greater depth.

A project of a new road tunnel through the St. Gothard, between Switzerland and Italy, to follow more or less the line of the existing railway tunnel, was recently put forward by some Swiss engineers. The length from Göschenen to Airolo would run to 15 kilometres, the width of the roadway to 6·50 metres, permitting two lines of traffic, and the total height proposed for the tunnel, which would be oval in shape, is 9·70 metres. The segmental space above and below would be used for ventilation.

Not a few tunnels are under construction throughout the world and especially in the U.S.A., for hydro-electric, water supply, irrigation, and other uses, some of great length and some of great dimensions. The Colorado river aqueduct, 240 miles long, for water supply of Southern California, includes 38 tunnels largely in rock, totalling 92 miles. San Jacinto, the longest (13 miles) and most difficult, encountered much " heavy " rock and " bad " ground, and water in great volumes and at high pressures. This tunnel took over five and a half years merely to excavate; a brief period when the difficulties are considered. The New York Board of Water Supply began its long, additional aqueduct from the Delaware river watershed to New York city. It includes tunnels of a total length of 84 miles, located at very great depths in the rock below ground surface.

Recent tunnelling with the aid of compressed air has in several instances required high degrees of air pressure. Labour laws, by further diminishing working shifts when air pressures exceed 18 lb. per square inch, continue greatly to increase costs. Added processes and comforts on behalf of health and safety have given the workers greatly increased immunity from compressed-air troubles. In view of alleged acquisition of silicosis in rock tunnel construction, and labour acts concerning the disease at large, investigations and dust-control experiments continue. While the protection of the health of the workers is of prime importance this present consciousness is particularly interesting so far as it concerns rock tunnels where practically all drilling is now wet and has been for over 20 years. A recent survey of Great Britain reveals that the death-rate of hewers from 20 to 55 years is less than the death-rate of all males up to the age of 55 years, and beyond that but little greater.

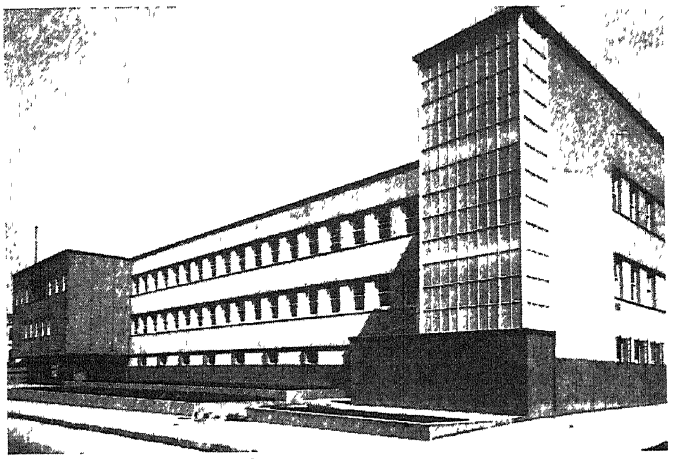


The Times—Howard Robertson]

LOOKING TOWARDS ANKARA FROM KAMÂL ATATÜRK'S RESIDENCE AT TCHANKAYA

TURKEY. In her foreign policy, Turkey in 1938 pursued first and foremost her policy of consolidating her relations with her immediate neighbours The pact of Saadabad with Afghanistan, Iraq, and Iran was ratified on Jan. 14, and a new agreement of friendship and neutrality signed with Greece on April 27. Relations with Bulgaria were improved by the visit to Sofia of the Premier and Foreign Minister on May 13, and above all, by the conclusion of the Salonica Agreement of July 31 (*see* BULGARIA), after which Turkish troops occupied the demilitarized zone of Adrianople (Aug. 21). Visits were exchanged also with Yugoslavia and Rumania. On July 11 Turkey signed an agreement to take from Yugoslavia 150,000 of the latter's Turkish subjects. As a Mediterranean State, Turkey leaned towards the western Powers, while clearly anxious to see peace between them and Italy, to whom, through the Balkan Entente (*q.v.*), she showed a friendly attitude. On Jan. 26 the Foreign Minister had said that Turkey would shape her own policy without letting herself be influenced by any foreign Power or group of Powers, and would not import into Turkey any political system of foreign origin. Relations with France were troubled in May owing to the dispute over the Sanjak of Alexandretta, where Turkey accused France of influencing the Arabs to prevent the Turkish element from gaining a majority on the electoral roll. She protested to the League (May 22), but opened direct negotiations with France at Antioch (June 11), and on July 4 signed a declaration regulating the Sanjak question on the basis that Turkey renounced territorial claims on the Sanjak, while France guaranteed the preponderance of the Turkish element therein. To this was added a new treaty of friendship, Turkey and France agreeing to co-operate in maintaining peace in the Eastern Mediterranean. In a newspaper interview published July 21, the Foreign Minister said Turkey was now the best of friends with France; towards Britain, who on May 27 had lent Turkey £16 millions, he expressed the warmest sympathy, declaring that " no matter what happens, never will we be found in a camp opposing Great Britain ". Nevertheless, on Oct. 7, Turkey accepted from Germany a credit of 150 million RM.

In internal politics, most of the year was uneventful. On June 29 an amnesty was granted to political offenders condemned by revolutionary tribunals. On Nov. 10 the



The Times—Howard Robertson]
THE AIR MINISTRY BUILDING AT ANKARA, COMPRISING THE MAIN GOVERNMENT BUILDINGS AND MOST OF THE EMBASSIES, PLANNED AS A COMPLETE UNIT

President, Kamâl Ataturk (*q.v.*) died. On Nov. 11 General Ismet Inonu (*q v.*), the Premier until 1937, was unanimously elected President. Dielal Bayer remained Premier, M. Sarajoglu becoming Foreign Minister, and M. Saydam Minister of the Interior. (C. A. M.)

Area and Population :
Area 295,000 sq. miles (9,250 sq. miles in Europe).
Population (est. Dec. 31, 1936) 16,490,000.
Chief Towns : Ankara, capital (pop. 125,000) ; Istanbul (745,000) ; Izmir, formerly Smyrna (170,000).
President. General Ismet Inönü.
Language. Turkish.
Religion. Mohammedan.
Production 1937 :

Wheat	3,818,700	metric tons
Barley	2,285,000	,, ,,
Rye	478,100	,, ,,
Oats	240,700	,, ,,
Maize	593,100	,, ,,
Rice (1936–37)	111,000	,, ,,
Potatoes	184,800	,, ,,
Tobacco	63,000	,, ,,
Sesamun (1936)	39,700	,, ,,
Olive Oil (1936–37)	28,600	,, ,,
Cotton	60,000	,, ,,
Wool	24,700	,, ,,
Mohair (1936)	6,400	,, ,,
Silk, raw (1936)	201	,, ,,
Lignite (1936)	96,000	,, ,,
Coal	2,340,000	,, ,,
Chrome Ore	92,000	,, ,,

Overseas Trade 1937 :

Imports, merchandise	£T. 114,379,026
Exports, ,,	£T. 137,983,551

Communications 1938 :
Roads, total (including new roads 5,990 miles) 24,330 miles.
Railways, State, 4,076 miles ; private, 270 miles.
Shipping, State lines, tonnage 57,908.

Finance and Banking :

Revenue, ordinary (est. 1938–39)	£T. 250,000,000
Expenditure, ordinary (est 1938–39)	£T. 250,000,000
Expenditure, extraordinary (est. 1938–39) · defence	£T. 57,000,000
public works	£T. 46,450,000
Public Debt (Dec 31, 1937)	£T. 508,600,000
Notes in circulation (Oct 31, 1938)	£T. 178,000,000
Gold Reserve (Oct. 31, 1938)	£T. 36,900,000

Exchange Rate (under Anglo-Turkish Agreement), (Dec. 29, 1938). 587 piastres (£T. 1 = 100 piastres) = £1 stg
Education 1937–38 :
Elementary, schools 6,181 ; scholars 750,673.
Secondary ,, 160 ; ,, 91,702.
Universities 2 , number of students 6,874.
In 1936–37, People's schools, established to teach adults to read and write in Latin characters, had 84,732 students.
Motor Vehicles : licensed (Dec. 1937), cars and taxis 3,443 , lorries, buses, etc. 6,041 ; cycles 724

TURKMEN S.S.R. The elections to the Supreme Council of this Republic of the Soviet Union were carried out in June 1938. Not less than 99·8 of the electorate were said to have given their votes for the communist and non-party *bloc*, which alone was permitted. Altogether 226 representatives were chosen, a large percentage of them being women. At the first session of the Council, from July 24–27, the general condition of the Republic was discussed. Assembly debates drew attention to the unsatisfactory conditions in agricultural, social, and cultural matters. The newly elected government of Turkmenistan consists of 18 members ; the head of the government is Aitbay Khudaybergenov.

Area and Population. Area : 171,428 sq. miles. Population (1933) : 1,269,000 (rural 1,024,000, urban 245,000), of whom 72 per cent were Turkmen. Total number of workers and employees (1936) 136,000 (in heavy industry 31 per cent women). The main languages are Turkmen, Russian, and Uzbek. Of the leading cities the capital Ashkhabad had (1936) 102,500 inhabitants, and Krasnovodsk 27,000.

Economic Life. Sown area (1937) 974,068 acres, of which (1936) 383,499 acres were cotton plantations. Output of oil (1936) : 309,800 tons. Budget (1938) : 441 million roubles.

Cultural Life. Expenditure on education (1936) 141·6 million roubles : in 1937 there were 1,390 schools ; 4 higher educational institutions with 1,329 students ; 24 technical colleges (4,469 students) ; nine workers' faculties (1,610 students). There were also 255 libraries with 672,000 volumes. (S. YAK.)

TYPHOID FEVER: *see* INFECTIOUS DISEASES, ACUTE.

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UDRŽAL, FRANTIŠEK, Czechoslovak politician, was born near Pardubice in Bohemia in 1866, and died in Prague on April 25, 1938. As a young man he joined the Young Czech Party, and was elected to the Austrian Reichstag In 1904 he transferred his allegiance to the Czech Agrarian Party From 1922 to 1929 he was Czechoslovak minister of national defence, and was prime minister from 1929 till 1932.

UGANDA. The province of Buganda is recognized as a native kingdom under the Kabaka, and is a highly developed political organization: in the other provinces full use is also made of the native authorities as agencies of local government. The native administrations dispose of a revenue of over £1½ millions. In many areas, prosperity depends mainly on the production of cotton by African peasants: coffee and tobacco production are of increasing importance. Education, mostly through mission schools, is comparatively advanced, and at Makerere Uganda possesses the most advanced centre for higher education in East Africa. The Commission of 1937 on Higher Education in East Africa has recommended the development of Makerere and its associated institutions to form a Higher College of East Africa, and the first sod of the new institution was cut in 1938 by H.R.H. the Duke of Gloucester.

A committee of inquiry into the labour situation recommended the regulation of labour conditions. It found that over 115,000 labourers come from outside the territory annually (J. L. K.)

Area and Population:
Area 93,981 sq. miles (13,680 sq. miles water).
Population (est. Dec. 31, 1937) 3,711,794 (Europeans, 2,111; Asiatics, 17,256).
Governor. Sir P. E. Mitchell, K.C.M.G.
Production 1937:

Coffee, raw (export)	13,100 metric tons
Cotton, ginned (,,)	62,800 ,, ,,
Sugar, refined (,,)	11,342 long tons
Tin Ore	507 ,, ,,
Gold	19,639 oz.

External Trade 1937: (*See* also KENYA)
Imports, principal articles for consumption . £3,555,754
Exports, principal domestic products . £5,702,736
Communications Dec. 31, 1937:
Roads: total 7,441 miles; Class I roads, 1,242 miles
Railways, open to traffic 332 ,,
Finance:
Revenue (1937) £1,857,873; (est. 1938) £1,756,755
Expenditure (1937) £1,871,092; (est. 1938) £2,179,659
Public Debt (Dec. 31, 1937) £2,235,000
Education Dec. 31, 1937:
Elementary schools, 289; scholars, 28,975
Middle schools, 24; ,, 2,317

UKRAINIANS, the most numerous of the Slavonic peoples, after the Great Russians, and one of the largest of all European peoples; easily the largest European people no part of which to-day enjoys complete national independence. The chief home of the Ukrainians is the country north of the Black Sea, where they inhabit a territory stretching from the Carpathians to the Don and beyond. This was the mediæval Russian land, and received the name of "Ukraine" (= "frontier") only when the centre of the Russian power and population shifted northward under Tatar, etc, attacks. Then too, Moscow began to claim to represent the true Russian stock, of which, it alleged, the Ukrainians or "Little Russians" were only a sub-branch This brought about among the Ukrainians a counter-claim of a separate national identity and a movement towards national independence. The ideal of national unity was weakened by the fact that a large portion of the nation had come under Polish (later Austrian) sovereignty; had been absorbed by the "Uniate" churches (Eastern churches in communion with Rome); and had half-evolved a separate "Ruthene" nationality. To-day the Ukrainians of Europe live under four governments: in the U S S.R. (nearly 35 millions, chiefly in the Ukrainian Soviet Socialist Republic); in Poland (five to six millions); in the Autonomous Territory of Carpatho-Ruthenia, within Czechoslovakia (about 500,000), and in Rumania (about 500,000–600,000). There are also many emigrants in the U.S.A. and western Canada. Historical, religious, and political differences still divide the different branches of the nation, and in the peasant masses national feeling is still largely dormant; but in the future, the Ukrainian question will undoubtedly become a problem of the first magnitude.

The problem is the more important because of its twofold aspect: a natural and inevitable national awakening may be utilized by outside Powers for their own ends. In this connexion the avowed interest taken by many leading German politicians in the Ukrainian question may lead to dangerous complications with the U.S.S.R. and with Poland. Although this interest had long been openly proclaimed, few steps had been taken before 1938 to translate it into terms of practical politics; but in that year Germany prevented the return of Carpatho-Ruthenia to Hungary, sent numerous officers, etc., to that territory, and supported the installation in it of a government which proclaimed its intention of making of Carpatho-Ruthenia the nucleus of the future independent Great Ukraine. The Ukrainians of Poland, who put forward demands for self-government within Poland, were also believed to enjoy the sympathies of Germany. (C. A. M.)

UKRAINIAN S.S.R. In 1938 two important government decisions were carried out in this Republic of the Soviet Union. On June 3 the large and rich Donetsk province was split into the Stalino and Voroshilovgrad provinces, and in August the Kiev Special Military District (formerly simply Kiev Military District) on the Western boundary of the Republic was brought to a war footing. Seventeen million people took part in the elections to the Supreme Council of the Republic in June 1938, at which 99·55 per cent of votes were given for the 304 official candidates of the communist and non-party *bloc*. The first session of the Council at Kiev was opened on July 25 by its oldest member, Professor Sintsov of the University of Kharkov. The election of the government took place under severe criticism by the members of the unsatisfactory work of at least five Commissariats of the Republic. The head of the government is Demyan Korotchenko.

Area and Population. Area: 171,042 sq. miles. Population (1933): 31,902,000 (rural 24,743,000; urban 7,159,000), of whom 80 per cent were Ukrainians, 9·2 per



Planet News]
HARVESTING ON THE "LENIN'S WAY" COLLECTIVE FARM AT VILSHANKA IN THE KIEV REGION OF THE UKRAINE

cent Russians, and 5·4 per cent Jews. In 1937 there were 4,800,000 workers and employees, 1½ millions of whom were in heavy industry. The chief languages are Ukrainian, Russian, and Moldavian. The leading cities, with 1936 populations, are the capital Kiev, 663,000; Kharkov, 625,000; Odessa, 533,000; Dnepropetrovsk (formerly Ekaterinoslav), 392,000; and Stalino (formerly Yuzovka), 276,000.

Natural Resources (estimated) Black earth 39½ million acres; coal 55 milliard tons; peat 2·6 milliard tons; iron ore over 1 milliard tons, quartz 10·5 milliard tons; manganese 400 million tons; mercury 6,000 tons; salt 3 milliard tons. Water power 2·6 million horse power.

Economic Life. In 1937 there were 27,300 collective farms; 958 machine and tractor stations, with 81,300 tractors and 33,000 lorries; 500,000 acres cotton plantations. Yield of grain was 1 milliard 300 million pood. There were 7·7 million cattle.

Industrial Output (1936): pig iron 8,862,000 tons; steel 7,995,000 tons; rolled metal 5,843,000 tons; coal 68 million tons; electric power 8,600 million kwh. Capacity of power stations (1936): 1·8 million kwh.

Total length of railways (1936) 8,880 miles, of which 125 miles electrified.

Budget (1938): 5,977 million roubles.

Cultural Life. The total number of school-children in 1936 was 5,227,000. In 1937 there were 17,736 Ukrainian schools with 4,319,000 pupils. Higher educational institutions (1936–37) numbered 117, with about 110,000 students, and there were 476 technical colleges with 143,200 students. In 1936 there were 276 research institutes.

In 1937 there were 13,000 libraries; 53 state theatres, 32 theatres of national minorities, 9 children's theatres and 5,501 cinemas; 1,507 hospitals, 3,026 polyclinics and dispensaries, 772 medical centres for women and children, and 2,317 maternity homes in the villages. Ukrainian newspapers and magazines in 1936 numbered 1,830 and 177 respectively. (S. YAK.)

UNDSET, SIGRID (1882–), Norwegian writer; born in Kalundborg (Denmark), eldest daughter of Dr. Ingvald M. Undset, Norwegian archæologist, she was educated in Christiania (Oslo) at a private day-school and a commercial academy, worked as a commercial secretary from 1898 until 1909, and published her first novel when twenty-five. Her marriage in 1912 to A. C Svarstad, a painter, was annulled in 1925 She has two sons and a daughter. Most of her novels, novelettes, and essays have been translated into English, among them *Jenny, Kristin Lavransdatter, Olav Audunsson, The Wild Orchid, The Burning Bush, Saga of Saints, Stages on the Road, The Longest Years, Ida Elizabeth, Gunnar's Daughter, Images in a Mirror.* She has also translated, among others, Chesterton's "The Everlasting Man" into Norwegian. She was awarded the Nobel Prize in 1928, has visited England and various other European countries, and has been chairman of the Norwegian Writers' Union since 1935. In 1938 Sigrid Undset collaborated in a new *History of Everyday Things in Norway.*

UNEMPLOYMENT. Of seventeen nations from which data were obtained in Dec. 1938, seven experienced more severe unemployment in the first two-thirds of 1938 than the corresponding months of 1937. The other ten fluctuated closely around their 1937 averages. In 1937 France, Denmark, the Netherlands, Austria, Great Britain, Poland, Canada, and the United States faced troublesome unemployment situations. The United States plunged into a business recession during the autumn of 1937 which displaced more than a million people from their jobs before Dec. 31. The American decline in employment in the autumn and winter of 1937–38 proceeded with unusual speed. The manufacturing employment index (Bureau of Labor Statistics) dropped from 175 in Aug. 1937 to 137 in April 1938—a decline of 21 per cent in eight months. The increase in unemployment in Great Britain and Northern Ireland was roughly 200,000 in the summer of 1938 over corresponding months in 1937.

Great Britain and Northern Ireland have three-fourths or more of their wage-earners (about 13 millions) under unemployment insurance. Of these, 1,755,491 were wholly or temporarily out of work in December 1937. In Jan. 1938 the number rose to 1,927,005 and it remained above 1,842,000 throughout November. From 250,000 to 500,000 more people were idle in the various months of 1938 than during the corresponding months of 1937. Starting in January with 13·3 per cent of the insured population idle, the unemployment percentage fluctuated closely about 13 per cent throughout the year. Though smaller than the American rise in unemployment, the British 1938 increase was substantial. If the 4,750,000 not covered by the insurance act were included in the figures, the unemployment percentage would be more apt to fall than to increase, since military service, the police, civil service, teaching and other relatively stable occupations were in this group. The year saw no substantial change in conditions in Eire.

France and the Netherlands both experienced unusually severe unemployment in 1937. French unemployment reached its peak in 1935–36. The decline during 1937 was small. Employers' reports showed employment in the summer of 1937 at less than 80 per cent of the 1930 level and man-hours worked at only two-thirds. Conditions got worse in 1938. The monthly figures ran approximately 30,000 higher in the summer of 1938. In the Netherlands the situation remained approximately the same in 1938 as in the preceding year, though slightly better.

In Belgium the substantial progress in re-employment in

1936 continued through the summer of 1937, followed by a steady and substantial increase in unemployment in the winter and spring of 1937–38. The employment index approximated 90 per cent (of 1929) during the first eight months of 1937. Days lost rose from approximately 2,600,000 per month in the summer of 1937 to over 3,600,000 per month in the summer of 1938. The daily average of unemployed was 163,039 in Jan. 1937, 199,070 in Jan. 1938. In July 1937, 102,980 were out of work, in July 1938 152,462.

In the first half of 1938, there was little change in unemployment conditions in the Scandinavian countries. Denmark's percentage of trade unionists unemployed was 21·8 per cent for 1937, and averaged approximately the same the first seven months of 1938. Norway's through July 1938 was 23 4 per cent (1937=21·6 per cent), and Sweden's through Aug. 1938, 11·3 per cent (1937=11·4 per cent). In the summer of 1937 the Swedish figures were moving to pre-depression levels, averaging 8 per cent, but in Denmark the summer average was 14·7 per cent and Norway 16·3 per cent

In Germany the average number of applicants at employment exchanges dropped from 2,052,483 in Jan. 1937 to 650,901 in July Though the Jan.–Feb. 1938 registrations were nearly a million and a quarter (largely seasonal unemployment) they dropped to 448,848 by June. The percentage of the insured population idle reached minimum figures in 1938. After January and February, when it was 5·3 per cent and 4·8 per cent, it dropped steadily from 2·5 per cent in March to 1·0 per cent in June and was slightly below 1·0 per cent in August and September.

Switzerland's employment exchange figures are unusually reliable measures of unemployment because both the relief act of 1919 and the unemployment insurance law require applicants to register at the employment exchanges. In Jan. 1937 the figure of such applicants was 110,754. Month by month the registrations declined to a low level of 49,244 in July; then increased gradually to 56,804 in October. During the first eight months of 1938 the unemployment situation was a little better than in the corresponding months of 1937.

Specific information on unemployment in Italy during 1938 was not available.

Czechoslovakia and Yugoslavia both had a rapid improvement in employment in 1937 followed by slight additional improvement in 1938. Starting 1937 at 75·1, the Czechoslovakian index climbed to 96·8 by June. This represented employment of approximately 2,400,000 people compared with 2,506,000 in 1929. After Feb. 1937 employment office registrations declined rapidly to below 250,000, July–Oct. 1937, the lowest figure since 1930. They doubled by mid-winter 1937–38, and then dropped by the summer of 1938 to 165,000—even lower figures than in 1937.

The Canadian 1937 employment index (1926=100) averaged 104 for the first five months of 1937 and 108·8 for the corresponding five months of 1938. The June–November index for 1937 was 121·3; that for 1938 was 113·9. The average number of registrants at the employment exchanges was 88,000 in 1937 and 106,000 in the first ten months of 1938. The trade union percentage unemployed was 10·8 per cent in 1937 and 12·7 per cent for the first ten months of 1938.

The only figures on unemployment in Mexico are "official estimates". The figure given for 1930 was 75,695; 339,378 for 1932; 186,906 for 1936; 187,357 for the first four months of 1937 and 200,165 for the first three months of 1938.

The United States took a special census of unemployment, Nov. 20, 1937, which recorded 7,822,912 as unemployed (2,001,877 of whom were employed on government relief work). This census was a voluntary report of individual citizens on forms left at all the homes by the postal service. A complete return might have shown as many as 10,800,000 idle on Nov. 20. The true number was probably somewhere between the 7,823,000 reported and 11 millions. To this must be added the late November and December layoffs, probably totalling more than 500,000. In the depths of the depression (1932-33) unemployment in the U.S totalled from 13,500,000 to 14,500,000 Minimum unemployment would be about 2 millions. There were employed on Federal public works financed by other than "regular" appropriations, approximately 2,420,000 people in Jan. 1938, and the figure increased to 3,423,000 by June, the highest monthly figure for work relief employment attained in the United States up to that time.

The American index of manufacturing employment was 106·0 in 1929 (1923–25=100) and 105·8 in 1937. The best month in 1929 (August) was 109·2; and August of 1937, 109·1. The 1937 improvement in employment failed, therefore, only to absorb the 5·7 per cent increase in labour supply resulting from population increase after 1929. In November, however, the index fell sharply from 107·2 to 101·1 and in December to 94·5. It fell to 87·8 in Jan. 1938 and fluctuated from January to September between that figure and 81·7. The employment index for the first eight months of 1937 averaged 107·4, for the first eight months of 1938, 85·6.

While employment exchange statistics are available for the U.S. the figures have been so profoundly influenced by relief, public works, and other governmental policies that they cannot be used without careful explanation of their gyrations.

Payrolls always fluctuated more violently than employment because of overtime and part-time work The monthly average of payrolls (1923–25=100) was 110·4 in 1929; but 46·7 in 1932; 85·6 in 1936; 102·0 in 1937. For the first eight months of 1937 it was 104·7, and for the same months of 1938, 75·1.

Japan was one of the nations with high employment in 1937, a by-product, of course, of war. The employment index (1929=100) was 115·8 in 1936. It started at 119·6 in Jan. 1937 and rose to 129·1 by June. The government's official estimates of unemployment in 1932 estimate that but 6·8 per cent of their employable population were idle, a figure hard to reconcile with an employment index of 82 that year. For Jan. 1937, their unemployment estimate was 295·561 (3·7 per cent) and it remained close to 275,000 throughout 1937. The estimates were about 20,000 lower during the early months of 1938 than for the corresponding months of 1937.

New Zealand's are entirely employment exchange figures. They indicate a gradual improvement in employment after 1934, with 1937–38 distinctly better than any year since 1933. The numbers registered ranged between 34,000 and 37,800 Jan.–Aug. 1937, declined to 8,367 in December, and were below that figure during the first nine months of 1938.

The only unemployment figures for Australia are compiled from reports sent in by union secretaries—a not very satisfactory type of unemployment statistics. The Australian trade union returns show 31,000 or 7 per cent of the union workers unemployed (monthly average) in 1927; a figure

which grew steadily to 120,454 (29 per cent) in 1932 and then gradually subsided to 53,992 (12·2 per cent) in 1936 The figures ranged downward in 1937 from 44,004 (9·9 per cent) in February, to 37,558 in December and averaged 37,111 and 39,810 in March and June 1938

The employment exchange registrations in Chile jumped from an average of 29,345 in 1931 to 107,295 in 1932, and then gradually dropped to 30,055 in 1934. Since then, applications for work have decreased sharply. Registrations were only 10,672 per month in 1935, 6,474 in 1936, and between 3,900 and 2,500 during the first six months of 1937, reflecting a high degree of employment in 1937. They remained in the neighbourhood of the 1937 figures through the spring of 1938. (*See* also NATIONAL INSURANCE; WAGES AND HOURS.)

UNITED CHURCH OF CANADA, THE, which in 1925 united the Presbyterian Church in Canada, the Methodist Church (Canada), and the Congregational Churches of Canada, reported for 1938 a membership of 700,000, with 1,800,000 persons under pastoral oversight; a Sunday school enrolment of 590,000 and 7,423 preaching places. The church owned property worth over $110 millions and raised a total of $11,500,000 for all purposes

Among the important features in the life of the United Church during the year were an agreement with the Presbyterians who did not enter the union of 1925, enabling them to use legally the name "The Presbyterian Church in Canada" without prejudice to the rights and claims of the United Church as declared by Act of Parliament; the adoption of the constitution of the proposed World Council of Churches with a request that the United Church be received as a constituent member, and a decision to establish one national church paper by amalgamating *The New Outlook* and *The United Church Record and Missionary Review.* There were also the placing of the moderatorship on a one-year instead of a two-year term basis, to enable pastors to assume the office without affecting the work of their own congregations, and the decision to launch a financial campaign to raise $4 millions in order to wipe out an accumulated deficit on the missionary and maintenance fund.

The General Council, which met in September, elected as its moderator the Right Rev. John W. Woodside, D.D., for many years minister of Chalmers Church, Ottawa. The Rev. J. R. Mutchmor, a graduate of Union and Columbia, was appointed to head the board of Evangelism and Social Service. The Rev. Charles Endicott was appointed acting secretary of the Missionary and Maintenance Committee for the next two years. (G. A. SI)

UNITED PROVINCES OF AGRA AND OUDH. The administrative differences between the two constituent provinces are being slowly obliterated; but the Agra province still retains its own High Court at Allahabad, and Oudh its own Chief Court at Lucknow. The governor is Sir Henry Haig, since Dec. 1934; and the cabinet remains unchanged under its premier, Pandit G. B. Pant. It is subject to the influence of the extreme Congress wing, the leader thereof, Mr. Jawaharlal Nehru, having his family home in Allahabad, and his sister being one of the ministers. But the premier has shown strength in his government, and it continues to be tested. Promises of release from the thraldom of their landlords had been freely made by Congress agitators to the peasantry, who are now clamouring to have those pledges fulfilled. The cabinet has launched a measure of land tenancy reform which would extend the hereditary principle in tenant rights and reduce rents by one-third While this will not go far enough to appease the unrest among the cultivators, it is fiercely opposed by the landlords Equal unrest prevails in the industrial classes, and a strike in Cawnpore in May 1938, which affected 32,000 workers and lasted for seven weeks, required all the premier's diplomacy for its settlement.

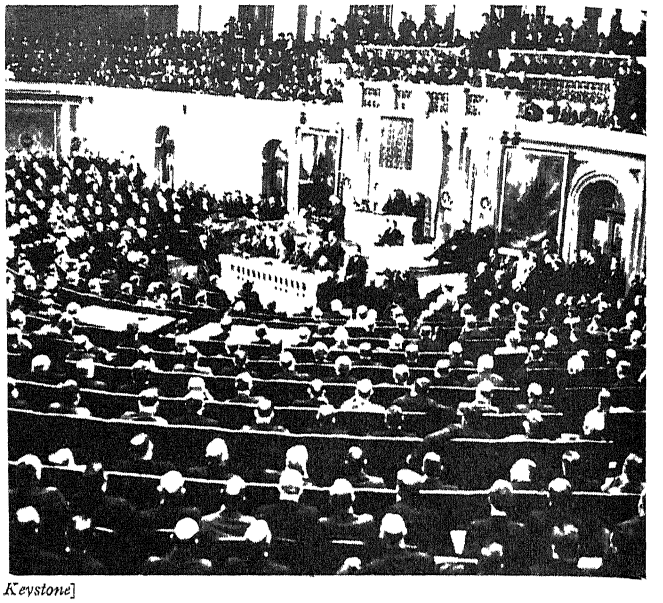
Practical problems of this sort seem to have weaned ministers from the excesses they had threatened when attacking the former British regime, and the only approach to a crisis, which occurred over an attempted amnesty for so-called political crimes (*see* INDIA), was settled amicably. A joint session of the two legislative chambers was held, for the first time in any province. It was necessitated by a difference between the two Houses over two money bills, which were designed not only to raise more revenue from stamps and court fees, but also to transfer some taxation from the poorer to the richer classes. The province was visited by a serious cholera epidemic in June Prohibition was introduced in two districts. Communal bitterness remained acute, and there were serious disturbances at Allahabad, Benares, and elsewhere. (ME)

Area and Population:
Area 106,284 sq. miles
Population (1931) 48,408,763.
Governor. Sir Harry Haig, K.C.S I.
Language. Western Hindi.
Religion. Mainly Hindu.
Production 1937:
Factories 527; No of workers employed (average), 147,502.
Finance 1937–38:
Revenue . . . . . Rs. 12,54,07,224
Expenditure . . . . . Rs. 12,66,74,253
Education:
Primary schools, 23,000; government high schools and intermediate colleges, 56; universities, 5.
Motor vehicles: licensed (March 31, 1937): cars and taxis, 12,508; commercial vehicles, 3,313, motor-cycles, 1,277.

UNITED STATES OF AMERICA, THE. As 1938 came in there was no mitigation of the depression (euphemistically called a "recession" by the President), which had hit the country in the autumn of 1937 after an encouraging rise of prosperity in the earlier months of the year. From 4½ million to 5 million men were added to the ranks of the unemployed and from one-fifth to one-fourth of the people of the United States were dependent on some sort of public support. Signs of emergence from the depression appeared in the summer of 1938, and during the second half of the year the curve was upward, until by the end of the year the business index stood again at approximately the level of Oct. 1937. Economists and business men quite generally expressed confidence that the year 1939 would bring increased prosperity (basing their prediction upon the need for expansion and replacement in the heavy goods industries), unless unforeseen obstacles to recovery should appear, such as what they consider undue interference by the government in the regulation of business, or the discouragement of private investment on account of the fear of over-inflation, or the further dislocation of foreign trade by economic, and perhaps even physical, war. As to government and business, both sides speak fair words. The National Association of Manufacturers declares that it has no thought of "sabre rattling", and President Roosevelt assures the faculty and students of Duke university that he does not "breakfast on grilled millionaires". But still the fundamental "ideologies" of big business and the New Deal remain antagonistic. The former insists that full recovery will come only from the initiative of

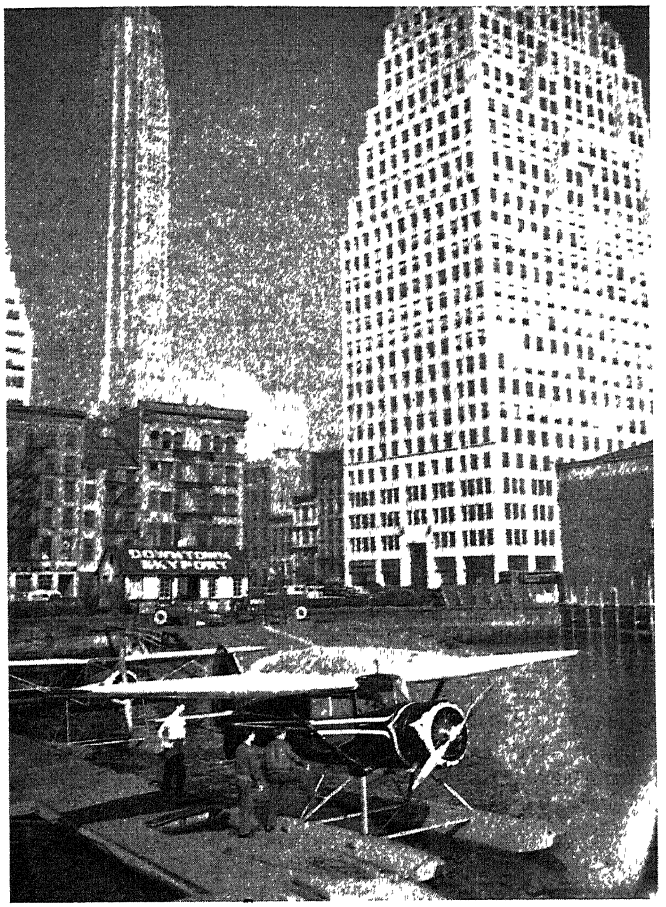
private business, which must be left free to attract investment by the prospect of fair profits and to increase buying power by the absorption of the unemployed into expanding industrial plants; that the government, while using its supervisory power to prevent gross abuses in business, should not hamper the honest by entering into competition with private business (as in the utilities field) or seek by law to dictate the responsibilities and distribute the profits of business. The New Deal, on the other hand, holds that the government is responsible for the welfare of the people at large and is the only "corporation" strong enough and disinterested enough to determine what are fair wages and hours of work, to provide adequate security for old age, to furnish jobs for millions of unemployed, to devise plans for the relief of the submerged farmers, and, through its multifarious agencies, to assume a hundred other paternalistic duties that many a professed State socialist of a generation ago would have thought beyond its sphere. This is the great social-political revolution that was ushered in with the inauguration of President Roosevelt—a revolution the profound effects of which will be appreciated only by a future generation

Congress. The third and final session of the 75th Congress (Jan. 3–June 16, 1938) presented a marked contrast to the "do-nothing" sessions of Jan. 5–Aug. 21 and Nov. 15–Dec. 21, 1937, in which, despite the President's reiterated urging, none of his major recommendations had been adopted. In his message to Congress of Jan. 3, 1938, the President renewed his request for constructive legislation, declared that, while he cherished no hostility to business, the obstructions to liberal government offered by some groups of business men, in the shape of tax evasion, monopoly prices and unfair competition, must cease; called upon capital and labour to co-operate in the task of economic recovery and social harmony; and stressed the need for adequate national defence in the face of grave threats to world peace. Stimulated as much perhaps by the thought of the impending mid-term elections as by the President's insistence, Congress proceeded to write into the statute book a number of laws, the most important of which were the Agricultural Adjustment Act of Feb. 14, which Mr. Henry A. Wallace, in an address to the farmers of the corn belt at Springfield, Ill, in the following October, called "the best farm programme that the nation has ever had", and the Fair Labor Standards Act (or Wages and Hours Act) of June 14, which the President hailed as "with the exception of the Social Security Act, the most far-sighted programme for the benefit of workers ever adopted". Over 17,000 bills were introduced in the session, but less than ten per cent of them became laws. The huge sum of $3,750 millions was appropriated for work relief, public works, slum clearance, low cost housing, farm loans and benefit payments, rural electrification, the National Youth Administration, and a Federal building programme. A $375 million five-year programme of flood control was authorized. The Reconstruction Finance Corporation was empowered to grant business loans up to $1,500 millions. Commercial and civil aviation were placed under a Civil Aeronautics Authority. The powers of the Securities and Exchange Commission were widened. A revised revenue law modified the taxes on undistributed profits and capital gains. A substantial increase was authorized for naval defence. A general investigation of monopolies was ordered. These accomplishments were cited by the President in a "fireside chat" of June 24 as justifying his assertion (perhaps also made with a side-long glance at the coming elections) that the 75th Congress had "achieved more for the future good of the country than any Congress between the end of the war and 1933".



Keystone]
PRESIDENT ROOSEVELT SPEAKING TO CONGRESS ON THE NECESSITY OF U S. REARMAMENT, JAN. 1939

The Presidential Purge. Criticism of the administration's policies and agencies grew bolder in the United States and in Congress as the business situation failed to improve in the first half of 1938. Unemployment showed little signs of abating, the public debt was mounting by more than a hundred million a month, the bitter quarrel in the ranks of labour continued, the 120-page farm bill was branded by its opponents as an incomprehensible hotch-potch, the National Labor Relations Board was attacked as a tool of John L. Lewis's Committee for Industrial Organization, and the Works Progress Administration under Harry Hopkins was accused of allocating the huge sums at its disposal as a campaign fund to regions where they would purchase votes for the Democratic Party. Disclaiming any desire "to be a dictator", the President nevertheless held to his determination that the policies of the New Deal should not be sabotaged, and deemed it both necessary and proper that, as leader of the Democratic Party and champion of the New Deal, he should interest himself actively in the elimination of the foes and critics of the New Deal from seats in Congress. It was not an unprecedented thing for Presidents to use their great influence in congressional elections, but it was nevertheless felt by many that such use of the executive power was unbecoming. George Washington had once icily refused the solicitation to lend his support to a congressional candidate. But President Roosevelt had no such scruples. In spite of the misgivings of his astute Postmaster-General, James A. Farley, who feared that the action might widen rather than heal the rift in the party, the President intervened by speeches and letters in the primary campaigns to defeat the renomination of several Democratic senators who had shown hostility to certain policies of the New Deal—notably those of Tydings of Maryland, George of Georgia, and Ed ("Cotton") Smith of South Carolina—and of Representative O'Connor of New York, who declared that the "Roosevelt purge" was an "escalator to dictatorship". O'Connor was defeated, but beyond that the purge was ineffective. Tydings, George, and Smith easily won the nomination (and the subsequent election) in their con-



Fox Photos]

NEW YORK: THE NEW SEAPLANE BASE AT THE FOOT OF WALL STREET, OCT. 1938

stituencies; while several ardent supporters of the New Deal, like Senator Pope of Idaho and Senator McAdoo of California, were defeated.

The Elections of 1938. Probably no mid-term election since that of 1866, which gave the radical Republican reconstructionists an overwhelming majority to wreck the conciliatory policy of Lincoln and Johnson, has been so important as the election of Nov. 8, 1938. Not that it marked a "landslide", like the mid-term elections of 1890 and 1910: the Democrats still kept a large majority in both houses of Congress, and Democratic governors were to remain in thirty of the States of the Union; but the Republican gains were so impressive as to re-establish that party, after six years of virtual impotence, as a strong political factor in U.S. government—in short, to revive the two-party system. James A. Farley, whose prediction of the outcome of the election of 1936 had been so uncannily accurate, thought that the Republicans might gain as many as forty seats in the House and two or three in the Senate. Actually the Republicans increased their representation in the House from 89 to 170 and in the Senate from fifteen to 23. They won eleven of the 32 governorships balloted for, taking nine from the Democrats and one each from the Progressives (LaFollette of Wisconsin) and the Farmer-Laborites (Benson of Minnesota). They elected governors in all six of the New England States, besides Ohio, Pennsylvania, and Michigan, and in New York State Governor H. H. Lehman won (for his fourth term) over his young Republican rival, District Attorney Thomas E. Dewey, only by the slim margin of some 67,000 votes. In the States, excluding the solid South, the Republicans polled 51·5 per cent of the vote, as compared with 40·1 per cent in 1936. In May the LaFollette brothers had tried to launch a third party at Madison, Wis., "The National Progressives of America", but it made little appeal to the country, a poll of Gallup's Institute of Public Opinion showing that over 70 per cent of the people were in favour of the two-party system, and the defeat of Governor LaFollette in the November election put an end to the movement. More promising seemed the plan advocated by Senator Vandenberg of Michigan in a speech at Boston on Feb 12, 1938, and supported by Glenn Frank's large Republican "policy committee", of combining the anti-New Deal Democrats with the Republicans to form something like the "Union Party" of 1864. That there was plenty of opposition to the New Deal was shown by the same Gallup poll, which recorded 62 per cent of the people who had voted for Roosevelt in 1936 as opposed to one or more of the administration's measures. Most significant was the attitude of the different economic groups. Those with incomes of over $40 a week gave only a 28 per cent approval of the New Deal, those with incomes of less than $20 a week gave only a 27 per cent disapproval; while the intermediate group was almost equally divided. Both the great labour organizations were for the New Deal: the C I O. by a vote of 79 per cent, the A F. of L. by a vote of 70 per cent. President Roosevelt's personal popularity showed little decline, but the sentiment was strong against a third term. The President was not much disturbed by the elections, attributing the Republican comeback largely to local issues in the States. But the new infusion of opposition members in Congress can hardly fail to strengthen the resistance of dissident Democrats to legislation entailing larger deficits in the budget and more drastic regulation of private business. The President has already announced his intention of leaving the initiative in legislation in the hands of Congress; and Congress realizes that unless changes are made in the Social Security Act and the Fair Labor Standards Act, in the administration of the PWA and the NLRB, and in the programme of uncurbed government spending regardless of the mounting public debt, the revolt of 1938 may grow by 1940 into a revolution which will oust the Democratic party from power.

The Budget. Immediately after delivering his annual message of Jan. 3, 1938 to Congress, the President presented his budget for the fiscal year of July 1, 1938–June 30, 1939. After having revised his estimate four times, he predicted a revenue of $6,320 millions and an expenditure of $7,408 millions, leaving a deficit of $1,088 millions. This latter contrasted with a deficit of $2,097 millions in 1937 and of $4,764 millions (a record high figure) in the year before that. This eighth successive year of adverse balances in the national treasury brought the total deficits from 1931–32 up to approximately $23,000 millions and the public debt to $40,000 millions. Furthermore, the President in his budget message of Jan. 5, 1939, to the new 76th Congress, asked for the unprecedented sum of $9,000 millions for the fiscal year 1939–40, against estimated receipts of $5,500 millions. President Roosevelt and his financial advisors are not disturbed by the fact that the public debt bids fair to reach $44,000 millions by July 1940. They believe that continued government spending is the best, if not the only way to raise the national income to a point ($80,000 millions suggested) where the receipts from taxation will bring the budget into balance. But critics of the excessive government spending, like Senators Glass and Byrd of Virginia, deny that it is a stimulus to industry (the only

source of real prosperity) and point to the fact that at the beginning of the present decade the national income stood at a figure which all the government expenditures of the Roosevelt years have been unable to restore. Moreover, these critics believe that the continued transfer of the load of debt from private industry to the government will not only further disrupt the economic structure of the country but also tempt the government into financial experiments that may end in the virtual repudiation of budgetary responsibility and a "fascist" control of the nation's industrial economy. How difficult it is, however, to find items of expenditure that can be reduced appears from a brief analysis of the 1938 budget. The interest on the public debt, now claiming $1,000 millions, must of course be paid. An equal amount allotted for adequate national defence (to be substantially increased in 1939), is regarded as imperative. The upkeep of the regular departments of government demands about $750 millions. Pensions of various sorts to war veterans, amounting to something over $500 millions, are a sacred pledge of the government, and any attempt to reduce them would meet with such opposition from the powerful veterans' lobby as no congressman would wish to face. Both parties are agreed that benefit payments to farmers, now involving an expenditure of nearly $600 millions, could not be cut off without replunging agriculture into the ruinous state in which it languished six years ago. Public works and relief, closely connected, make up the bulk of the remaining expenses of the government, leaving only about 8 per cent of the total for miscellaneous items such as the CCC, the TVA, and the NYA (since the item for social security is balanced by special taxes levied on workers and employers). The 1938 appropriation of $1,400 millions for the PWA proved, in view of the "recession" and the consequent enlargement of the relief rolls, to be insufficient to carry on the work for more than seven and a half months of the fiscal year, and the President has asked for a further allotment of $875 millions to carry over till June 30, 1939. If the hope of cutting expenditures beyond a few trifling millions, therefore, seems to be frustrated at every point, the prospect of meeting the deficit by increased taxation, in the present stagnant condition of industry, is considered unwise. It being just the further government borrowing which, in the eyes of the critics of the policy, is the main cause of the stagnation in business, the United States seems to be caught in a vicious circle. At any rate, the government is now spending nearly $1·50 for every dollar of income, and the difference, representing a yearly average of some $3,000 millions, is added to the public debt.

Farm Relief. Because the farmers, though decreasing steadily in proportion to the urban and industrial classes, still constitute the largest element in the population, and because prosperity is conditioned more basically on the health of agriculture than on any other factor in U.S. economy, the great Crop Control Act, or Agricultural Adjustment Act of Feb. 14, 1938, may be considered the most important piece of congressional legislation of 1938. It was the result of the efforts of the indefatigable Secretary of Agriculture, Henry A. Wallace, and his helpers to devise a law which should co-ordinate and preserve all the measures taken since the Supreme Court declared the Agricultural Adjustment Act of 1933 unconstitutional by its six to three decision of Jan. 6, 1936: namely, the Soil Conservation Act of Feb. 1936; the Domestic Allotment Act of the same month; and the Marketing Agreements Act of 1937. The three main purposes of the act, for an account of which *see* LAW AND LEGISLATION, § *United States*, are (1) to raise farm income by government benefit payments, subsidies, and loans, (2) to conserve the soil through the restriction of soil-depleting crops, and (3) to help stabilize prices by enabling the farmer to avoid dumping his surpluses on a glutted market at ruinous prices. We commonly speak of overproduction as the main cause of the farmers' submerged condition, but it would be more correct to speak of underconsumption. For if the millions of people of the United States who are now too poor to buy the bread and meat and milk and fruit that they want only had the means to purchase these commodities, there would be no farm surpluses; and if the thousands of farm houses that now lack electric light, bathrooms, central heating, vacuum cleaners, and a hundred other conveniences could acquire them, the stimulus to industry would enhance the buying power of labourers in factory and mill. That we should have in these days of superb productive technology the ironic situation of millions of hungry and ragged people living in the midst of superabundant food and clothing, is a sad commentary on our sense of social justice.

Wages and Hours. Since the Supreme Court's unanimous annulment, in May 1935, of the National Industrial Recovery Act of 1933, the champions of wages and hours regulation in Congress had been trying to get through a substitute measure which should accomplish the main objects of the original act, without the offensive features (like the processing tax) which made it invalid. A Black-Connery wages and hours bill passed the Senate in the summer of 1935, but failed of action in the House. A similar bill of May 24, 1937, was held up in the Rules Committee of the House (largely through the influence of Chairman J. J. O'Connor of New York, whom President Roosevelt put on his purge list) until a petition signed by a majority of the House early in Dec. 1937 forced the bill to the floor, where, after a heated debate, it was recommitted to the Labor Committee by the narrow vote of 216 to 198, four days before the close of the extra session. Coming up again in the new session of 1938, under the sponsorship of Senator Wagner of New York, the Wages and Hours Bill, or the Fair Labor Standards Bill, with important changes, was passed by both houses of Congress and signed by the President on June 14, 1938, to go into effect on Oct. 24. For its provisions *see* LEGISLATION, INDUSTRIAL; CHILD LABOUR. Critics of the Act not only protested against the undue meddling of the government with wage and hour agreements, but also contended that the Act would injure rather than help labour because it would tempt employers who were already paying more than the statutory wages to reduce them toward the minimum set by the law. Mr. Elmer F. Andrews, former Commissioner of Labour of New York State, had been made Administrator of the Act, with a large staff in 12 regional offices; he replied that this prediction was belied both by his experience with the minimum wage law of New York and his observation of the working of similar laws in states like Massachusetts, New Hampshire, Ohio, Illinois, and California. The Fair Labor Standards Act, whatever its effect on labour conditions may prove to be as its provisions go into full operation, is significant at least in this respect, that it is the first Act in the United States history prescribing nation-wide compulsory Federal regulation of wages and hours: for the voluntary "codes of fair dealing" in the National Recovery Act of 1933 had been worked out in conferences between representatives of the employers, the

employees, and the government (*See* also WAGES AND HOURS)

National Labor Relations Board. No problem in the field of labour has given rise to more controversy between administrative orders and the courts and between employers and the unions than the activities of the National Labor Relations Board, which was set up as an independent agency under the Wagner National Labor Relations Act of July 1935, to investigate labour controversies, prevent unfair practices on the part of capital or labour, and protect labour organizations in their right of collective bargaining through representatives of their own choosing The constitutionality of the Wagner Act was upheld by a five to four decision of the Supreme Court on April 12, 1937, Chief Justice Hughes declaring that the opinion was concerned only with the legality of the Act and not at all with its expediency or fairness. But it was exactly the fairness of the Act, or of the Board's activities under the Act, that was constantly called in question. The Board's orders to various employers (the Ford Motor Company, the Kansas City stockyards, the Thompson Products Company of Cleveland, the Mackay Radio and Telegraph Company) to reinstate workers who had been discharged for alleged union activities, and even, in the case of the Fansteel Metallurgical Company of Chicago, to pay back wages to men who had gone out on strike, led to a series of conflicts in the spring and summer of 1938, in which the employers complained bitterly of the bias of the Board in favour of labour, especially of the C.I.O , and the courts themselves frequently set aside the orders of the Board. Indeed, in a decision against the Board on May 10, a federal circuit court in Kentucky declared that "the Board's findings tended to promote discord among employers and employees instead of harmonious and joint discussion of their difficulties". Senator Burke of North Dakota asserted that the Wagner Act failed to protect the workers against coercion by high-powered union organizers, and sarcastically proposed that it should be entitled "an act to increase troubles, to spread unemployment, and to disrupt industry". The A.F. of L. accused the Board of being a mere tool of John L. Lewis' C.I O., and former Secretary of State Henry L. Stimson, in an open letter to the *New York Times* of Nov. 2, 1938, wrote a scathing indictment of the Board as a body which acted at once as prosecutor, judge, and jury, and a one-sided tribunal to which only labour had recourse—as if it were the workers alone who had grievances or the employers alone who were guilty of abuses. While the critics of the NLRB insist that changes should be made in the Wagner Act to make the Board an impartial agency like the Interstate Commerce Commission or the Federal Trade Commission, Chairman J. Warren Madden and his large staff of regional administrators in 22 large cities of the United States maintain that the law needs no modification. The Board handled over 10,000 cases, affecting more than two million workers during the fiscal year ending June 30, 1938, and succeeded in reinstating 88,000 persons deprived of their jobs by strikes and lock-outs and 6,600 discharged for subversive union activities. Perhaps this mediatory work of the Board contributed to the falling off of the number of strikes in 1938, though the business recession in itself would tend to bring about such a diminution. According to a report of the Department of Labor on Sept. 26, 1938, there occurred only 1,353 strikes involving 390,891 workers in the first seven months of 1938, as against 3,217 strikes involving 1,470,507 workers in the corresponding months of 1937. For a further account of the activities of the NLRB, and for the position and inter-relations of the American Federation of Labor (*q.v*) and the Congress of Industrial Organizations (*q v*), *see* TRADE UNIONS, § *United States*, STRIKES AND LOCK-OUTS, § *United States*, LABOUR.

Transport. The year 1938 saw no improvement in the financial situation of the railroads, which has become, like the plight of agriculture, a perennial problem both for the industry and for the government. Passenger and freight traffic declined during the year, and there was a sharp falling off in new equipment. For an account of the various efforts made or proposed during the year to resolve their difficulties, *see* RAILWAYS, § *United States*.

The Merchant Marine Act of the summer of 1936 aimed at the restoration of American shipping to a rank among the merchant fleets of the world worthy of the wealth and prestige of the nation. The act created a Maritime Commission, which, under the vigorous chairmanship of Joseph P. Kennedy (now U S. Ambassador at the Court of St. James's), advocated the construction of fifty ships a year and proposed a ten-year programme to accomplish by 1948 a fleet of 5 million tons at a cost of $1,250 millions. Though the United States had ships in the Atlantic, the Pacific, and the round-the-world trade, only about 300 of 1,400 American vessels of over 2,000 tons were in the foreign service, and only three out of every ten American passengers for foreign ports sailed under the American flag. The remainder of the merchant fleet was divided between the coast trade (which by law was open only to vessels of American registry) and traffic on the Great Lakes. In 1938 current building contracts reached a low record of fifty ships · three 13,000-ton cargo and passenger ships for the New Orleans–South America trade, 34 fast cargo carriers for general world trade, twelve tankers, and a new flag-ship for the American Line. The latter boat, the "America", building at Newport News, Va , in 1938, to be ready for service in 1940, will be the largest merchant ship (26,000 tons) ever constructed in American yards, with accommodation for over 1,200 passengers. It will replace the huge "Leviathan", which, after lying for several years at its dock at Hoboken, N.J., sailed under its own steam on Jan. 25 for Scotland, there to be broken up for junk. In addition to the construction of new vessels, the Maritime Commission may make loans for the reconstruction of lines up to 75 per cent of the value of the completed ships. Thus, on Aug. 19, 1938, it bought 90 per cent of the voting stock of the Dollar Line and authorized the building of 24 new vessels. Subsidies to the merchant marine amounted to $13 millions in 1938. Finally, in July, the Commission opened sailors' training schools in New York and California. (*See* SHIPPING, MERCHANT MARINE.)

Aviation. The network of commercial airways in the United States grew from 2,000 miles in 1926 to 23,000 miles in 1938. In the fiscal year ending June 30, 1938, 362 planes with a personnel of 12,546 pilots, engineers, and crew, carried 1,214,958 passengers over nineteen scheduled lines, averaging a daily mileage of 234,922. They were served by 2,383 airports and landing fields. New aircraft to the number of 1,974 were built in the first six months of the year, a gain of 22 per cent over new construction in the corresponding months of 1937. The most notable projects were the Pan-American Airways request in the spring of 1938 for bids for the construction of 100 passenger planes with a speed of 250 miles per hour and a cruising range of 5,000 miles, to carry five times the pay load of the famous

Pacific "Clippers", and the submission by the Seversky Aircraft Company of plans for a fourteen-hour New York–London service. Technical improvements and safety devices added greatly to the serviceability of the planes, especially in night flying and all-weather flying. About 94 per cent of all the scheduled trips were started in 1938 and 88·4 per cent of them were completed. Even the severe hurricane of Sept. 23, which wrought havoc along the North Atlantic coast and put several railroads out of commission, caused only a 30 per cent interruption of the air traffic of the region. The government recognized the importance of the aeroplane as a common carrier by creating, on June 23, 1938, a Civil Aeronautics Authority, which is to have something of the same control over aviation that the ICC has over the railroads. The act prohibits mergers and consolidations of the airlines, or interlocking directorates, without permission of the CAA, and furthermore requires that employment conditions conform to the rulings of the NLRB, and that all aircraft be subject to the call of the postmaster-general for transport of mail. The CAA is also directed by the law to make a survey of the airports of the United States and to report to Congress by Feb 1, 1939, on the advisability of Federal construction, operation, or ownership of such ports. The most spectacular aerial event of the year was the 14,824 mile flight around the world by Howard Hughes and four companions in a Lockheed monoplane called "The New York World's Fair". The most amusing aerial event of the year was Douglas G. Corrigan's "by mistake" flight from New York to Dublin, on July 17. Five fatal accidents occurred in civil aviation during the year, resulting in the deaths of forty persons (ten pilots and co-pilots, 22 passengers, and eight crew). Among the killed was Frank Hawks, the holder of more speed records than any other flier in the world, who crashed with a companion near East Aurora, N.Y., on Aug. 23. A memorial lighthouse was erected on Howland island in the South Pacific in honour of the foremost American woman flier, Amelia Earhart, who disappeared on the hop from New Guinea to Howland in her attempted flight around the world in 1937. The fatality rate for 1938 was one passenger killed for every 13 million miles flown.

Tennessee Valley Authority. Though from the first there were charges of mismanagement and waste in the TVA (as, indeed, in the case of most of the New Deal agencies), the right of the Federal Authority to prosecute that part of the programme which concerned navigation, flood control, reclamation, and national defence was not called in question. It was the "incidental" function of selling to the public the electrical power generated by the series of dams along the river and its tributaries that raised the protest of the utilities companies operating in the region. One of the avowed objects of the TVA being to furnish a "yardstick" for the price of electric power, the private companies complained that if the rates charged by the Authority were too low the loss would be made up by the taxpayers in servicing the government loans to the TVA, whereas their own losses incurred by the unfair competition of the Authority's rates would come out of their stockholders and would cause serious depreciation in the value of their securities. Wendell L. Willkie, president of the Commonwealth and Southern, which controls many subsidiary power companies in the States affected, led the attack on the power policy of the TVA. When the Supreme Court in an eight-to-one decision of Feb. 17, 1936, declared that the government's sale of power from the Wilson dam at Muscle Shoals, Alabama (constructed as a measure of national defence long before the TVA was established) was constitutional, eighteen utilities companies, under Willkie's leadership, sued for an injunction prohibiting the Authority from building more dams or from selling power from those already completed (Norris, Wheeler, Pickwick Landing) to municipalities and farmers' co-operatives. On Jan 21, 1938, Judge Florence Allen, in a special district court at Chattanooga, refused the injunction and declared that the sale of power by the government did not constitute an illegal invasion of the rights of the private companies, which could claim no immunity from competition. Thereupon the companies took the case to the Supreme Court of the United States, where it now (Jan 1, 1939) awaits decision. That the TVA will be upheld is likely from the fact that on Jan. 3, 1938, the Court handed down two unanimous decisions against the Alabama Power Company and the Duke interests which had challenged the right of the government to make loans to municipal electric plants. The case hinges on the question of whether the generation and sale of electric power is a legitimate function of the TVA under the act of its incorporation, or an incidental function assumed *ultra vires*. For an account of the dissension between A. E. Morgan, the chairman of the TVA, and his two co-directors, *see* TENNESSEE VALLEY AUTHORITY.

Foreign Trade. The volume of United States foreign trade in the fiscal year 1938 amounted to $5,415,095,000, which was $1,000 millions under the figure of the previous year, but more than double that of 1933 ($2,517,526,000). The United States led the world in exports ($3,401,125,000), the five leading commodities being in order: machinery, petroleum, cotton, automobiles, and steel and iron, and was second only to the United Kingdom in imports ($2,013,970,000), of which rubber, sugar, coffee, paper and newsprint, and vegetable oils headed the list. The United States share of the world's trade was approximately 13 per cent of exports and 11·4 per cent of imports. The United Kingdom was the best customer, followed by Canada, Japan, France, and Germany; and the United States bought most heavily from Canada, with Japan, Malaya, the United Kingdom, and Cuba following in the order named. The trade with China and Spain was naturally diminished by the warfare in those countries, while the crusade for the boycott of Japanese and German goods also tended to reduce the imports. New York easily remained the first port of entry in the world, with a registered tonnage of 68,500,000, as against 29,673,000 tons entering London and 28,334,000 entering Kobe, Japan. In spite of U.S. efforts since the days of James G. Blaine to capture the Latin-American markets, the republics south of the Rio Grande still buy twice as much from Europe as they do from the United States, whose trade with her Latin-American neighbours is less than that with Asiatic countries. Still, the United States is steadily increasing her trade with South America, having gained 56 per cent in sales to ten countries of that continent in the last two years. Under the Trade Agreements Act of 1934, the Secretary of State was empowered to negotiate reciprocity pacts with foreign nations, in order to free foreign commerce from the restrictions put on the normal flow of international trade by quotas, embargos, subsidies, currency manipulation, and other artificial hindrances; and to help remedy the injury done to U.S. foreign commerce by the unfortunate Smoot-Hawley tariff of 1930. The advantage of such trade pacts is that they do not have to run the gauntlet of the Senate's ratification, which



Keystone]

SIGNING OF THE UNITED STATES-BRITISH-CANADIAN TRADE PACTS, NOV 24, 1938. LEFT TO RIGHT, SEATED · A. E. OVERTON, SECOND PERMANENT SECRETARY TO THE BRITISH BOARD OF TRADE; SIR RONALD LINDSAY, BRITISH AMBASSADOR TO U S A.; PRESIDENT ROOSEVELT; MR MACKENZIE KING, PREMIER OF CANADA, AND MR CORDELL HULL, U.S. SECRETARY OF STATE

thwarted the attempts to secure reciprocity treaties under Theodore Roosevelt and Taft. Up to the year 1938, Mr. Cordell Hull had negotiated seventeen trade agreements, which, according to Francis B. Sayre of the State Department, had resulted in an increase of 62 per cent in American commerce with the nations concerned, as against an increase of only 25 per cent with other countries. Besides the renewal for a year of the trade pact with the Soviet Union, two new agreements were negotiated in the year 1938. The first one, with Czechoslovakia on March 7, will unfortunately suffer from Germany's seizure of the major part of Czechoslovakia's industrial area. The second new pact, that between the United States and the United Kingdom, Canada, Newfoundland, and fifty colonies of the British Empire, signed by Mr. Cordell Hull, the British ambassador, and the Canadian premier in the presence of President Roosevelt at the White House on Nov. 17, 1938, is far and away the most important of all the agreements negotiated. It contains mutual tariff concessions on more than 3,000 commodities, and its far-reaching effects will be realized when we remember that trade between the United States and Canada is larger than that between any other two countries of the world and that the commerce with Canada and the British Empire amounts to one-third of the U.S. total foreign trade. Finally, on Dec. 16, the Pan-American conference at Lima confirmed the policy of unregimented and undiscriminating trade between the American republics. (*See* BALANCE OF TRADE; EXPORTS AND IMPORTS; TRADE AGREEMENTS.)

Defence. Owing to the geographical position of the United States and the comparative military weakness of immediate neighbours, the phrase national defence with Americans has been virtually synonymous with naval strength. President Roosevelt, an enthusiastic advocate of a great navy and himself a former assistant-secretary of the Navy, asked in his budget letter of Jan. 1938 for a $1,000 millions outlay for this branch of the service, which had cost $539 millions in the fiscal year 1937. The House, on Jan. 21, passed a naval bill of $553 millions, but a week later the President called for an additional $800 millions "for purely defensive purposes". "We must keep any potential enemy many hundred miles away from our continental limits", he said. This plan for the enormous enlargement of the navy immediately stirred a lively debate in Congress and in the country. Professor Charles A. Beard (author of *The Navy—Defence or Portent*) testified before the House committee on Feb. 9 that the new programme including huge battleships, long-range cruisers and an immense fleet of aeroplanes, was designed not for defence but for aggressive war. Admiral W. D. Leahy, Chief of Naval Operations, was accused of seeking an "understanding" with Great Britain concerning joint action in the Far East, and resolutions were introduced in the House and the Senate calling on Mr. Cordell Hull to confirm the Admiral's denial, which he did. On March 21 the House passed the Vinson Bill by a vote of 292 to 100, and the Senate concurred on May 3 by a vote of 56 to 28. By the President's signature the country was committed to a programme of expansion in naval personnel and construction, entailing a cost of $1,126,546,000 over a period of ten years. The political crises and threats of war in Europe, culminating in the Munich Pact of Sept. 28, strengthened the sentiment in the U.S. in favour of increased national defence. Navy Day (Oct. 27) was celebrated with elaborate programmes of speeches, parades, and radio broadcasts. The President sent a letter to the secretary of the Navy, Mr. Swanson, urging the construction of eight new ships during the coming year, and in a radio talk to the *Herald Tribune* forum he declared that "while others arm we cannot disarm". On the last day of the

year the Navy Department signed the contract for the building of the "South Dakota", a battleship of 35,000 tons which, like each of its five sister ships under construction, will cost about $70 millions. According to the figures of Admiral Leahy, the United States' "under-age" war fleet of battleships, aeroplane carriers, cruisers, destroyers, and submarines, on Nov. 15, 1938, totalled 914,813 tons, with an additional tonnage of 433,650 (128 vessels) building or authorized. These figures, comparing with a total tonnage of 1,715,000 built or projected by Great Britain, 789,000 by France, 778,000 by Japan, and 540,000 by Italy, indicate that America is returning to Woodrow Wilson's programme for a "navy second to no other in the world". The plans for national defence also envisage a great expansion of air forces, though the movement for the combination of the army and navy air services into a new department of "Air Defence" meets with jealous opposition from both branches. During 1938 American air forces suffered a number of fatal accidents. On Jan. 5, a Navy bombing plane crashed off San Pedro, Calif., with the loss of seven men; on Jan. 11 two planes collided during Navy manœuvres in the same region, carrying eleven men to death; on March 30, three bombers fell into the sea off Hawaii, on June 10, an Army plane crashed and burned near Delavan, Ill., with eight fatalities; on Sept. 21, the Chief of the Army Air Corps, Major-General Oscar Westover, lost his life in the crash of his plane near Burbank, Calif.; and on Nov. 18, eight persons were killed in the plunge of an army bomber at La Grange, Ga.

The army roster in 1938 comprised a total of 493,931 men and officers in active service and trained reservists, including the Regular Army, the National Guard, and the Reserves—a figure that is insignificant when compared with Russia's 9,000,000, Italy's 7,500,000, Japan's 6,500,000, France's 6,000,000, and Germany's 4,000,000, according to available official statistics of Nov. 1, 1938. The U.S. Army air forces (28,995 men) too, are but a small fraction of those of Italy (430,000), Germany (226,000), or the British Empire (228,000). There were 836,953 persons on U.S. pension rolls in 1938, and the cost of pensions to the government was $402,768,896, of which more than half ($230 millions) was paid to veterans of the World War, $118 millions to veterans of the Spanish-American War, and about $40 millions to veterans of the Civil War or their widows. The Veterans Administration, under General Frank T. Hines, is operating over eighty agencies of relief and rehabilitation, such as hospitalization, vocational training, medical assistance, and employment.

Latin-American Relations. The relations of the United States with her neighbour south of the Rio Grande were worse in the year 1938 than they have been in any other year since Ambassador Morrow's conciliatory mission to Mexico more than a decade ago. On the very first day of 1938, President Cárdenas announced the abrogation of the Morrow-Calles oil agreement, and declared that the foreign petroleum companies must pay royalties to the Mexican government. This move the President followed on Jan. 19 by an executive decree raising duties on most of the imports from the United States by 10–20 per cent. On March 1, the Mexican supreme court unanimously upheld an order of the Federal Labor Board increasing by 33⅓ per cent the wages of 18,000 workers in the oil fields, establishing a pension system for such workers, and giving them a share in the management of the properties. When seventeen British and American oil companies protested that they could not meet the $7,300,000 pay rise ordered by the Labor Board, the government on March 18 announced the nationalization of the petroleum industry and the expropriation of the foreign-owned oil lands, which were valued at $450 millions. These threats to the "good neighbour" policy, as Mr. Cordell Hull called them, embittered the relations between the two countries for the entire year. Mexican workers seized five American owned mines on July 11, and on the 26th the Mexican court denied the petition of the seventeen oil companies for an injunction against the government appropriation of their lands. Ill feeling was increased by huge mass meetings and parades of Mexican workers, who shouted "Down with American Imperialism" and hooted American tourists in the streets. Nor was the situation helped by a revolt against the Cárdenas government which broke out in San Luis Potosi and reached such a serious stage late in May that Americans were warned by the U.S. State Department not to travel on the highway between Laredo, Texas, and Mexico City. After a sharp exchange of notes, the Mexican Government informed the United States on Aug. 3 that it would negotiate for the settlement of claims, but only on condition that the United States should agree to payments spread over a period of years. The critical situation came to an end when, on Nov. 12, Mexico agreed to pay $1 million by May 1, 1939, and to abide by the decision of commissions set up for the valuation of the lands. There was considerable uneasiness in the United States over the Nazi propaganda in Latin-America, especially in Brazil, where President Vargas had set up a dictatorship. But probably the fears were exaggerated; for even Vargas himself declared that he was "a hundred per cent loyal to American ideals". A comforting event in South America was the conclusion of the century-long conflict between Bolivia and Paraguay over the Chaco region. On July 21 peace was signed between the two countries at Buenos Aires, and a committee of representatives of six American nations (Brazil, Chile, Peru, Argentina, Uruguay, and the United States) was appointed to determine the boundary line. The award was made on Oct. 10, giving Paraguay 69,000 sq. miles of the disputed territory, and on Nov. 26 Bolivia and Paraguay resumed diplomatic relations.

The Lima Conference. The most notable event of the year in Latin-America was the eighth Pan-American Con-



Keystone

OFFICERS OF THE U.S. AIR G.H.Q. PLANNING DEFENCE AGAINST A THEORETICAL ATTACK ON THE ATLANTIC COAST

ference, which was opened on Dec. 9 at Lima, Peru, and lasted for eighteen days Secretary of State Hull headed the United States delegation of eleven members, which included Alfred M Landon, the Republican candidate for the presidency in 1936 The main objectives of Mr Hull were (1) to assure the maintenance of unregimented and undiscriminating trade between the 21 nations represented, as against the artificial barriers of quotas, subsidies, and embargos set up in many European countries, and (2) to secure a solid front of the American nations against the penetration of Fascism and Communism. The first object was easily won in the early days of the conference, but there was a hard battle over the second. It has been noted in the discussion of foreign trade that the commercial connexions of many of the South American countries with Europe were very close. This was particularly true of Argentina, the most advanced of these States, whose wheat and meat were not wanted in the United States, but found their market across the sea. While, then, eighteen of the Latin-American delegations were ready to support the United States in its desire for a clear declaration of solidarity in the face of foreign aggression, Argentina, haltingly followed by Uruguay, was opposed to anything more than a vague proposition that, in case of danger to their safety, the various States might meet for consultations between their foreign ministers Furthermore, the conference suffered from the presence of Fascist propagandists, who did their best to sabotage the discussions by driving a wedge between the Argentine and the United States delegations; the Nazi press accused the U.S of trying to coerce the other republics into a military alliance. It took infinite tact and patience on Mr. Cordell Hull's part to avoid any semblance of offence to the sensibilities of the Argentines (who had always been the least well disposed of all the South American nations to the United States), and at the same time to bring them into line for an unanimous pronouncement of the conference. He did not strive or argue with the Argentines, but allowed their sister states of South America to take the lead in converting them, and the result was that Argentina came more than half-way to meet the United States programme. On Christmas Eve the "Declaration of Lima" was signed by every one of the 21 delegations. It did not create a Latin-American League of Nations or International Court of Justice; much less did it establish a military alliance. But it did give a pledge of common concern and action in case of any threat to the peace, security, or territorial integrity of an American state, more definite than any that had come out of a previous Pan-American conference. Besides the engagement that they would in case of danger "make effective their solidarity" and "co-ordinate their sovereign wills by means of consultative procedure", the nations passed resolutions condemning racial and religious intolerance and the collective activities of groups of aliens, together with the hundred or more customary agreements on commerce, patents, copyrights, sanitation, education, and the like. The Declaration of Lima is not a treaty, like the eight conventions which have issued from former conferences, and whose provisions it is proposed to combine into a single treaty at the next Pan-American conference at Bogotá in 1943. (*See* PAN-AMERICAN CONFERENCE.)

Foreign Affairs. The year 1938 saw little in the way of incidents or crises with the nations of the Old World. The United States neutrality act of 1937 remained unchanged, in spite of a good deal of clamour for the lifting of the arms embargo on Spain. Japan's progressive penetration into China has caused no such protest as came from the State Department at the time of the Manchurian invasion, but only the repeated demands that the Japanese should respect the safety of American lives and the security of American property—which the Japanese government expresses its most polite intention to do. However, Japan has denounced the Nine Power treaty to which the United States is a party, and has declared John Hay's policy of the "Open Door" in China an antiquated doctrine, superseded by the realistic conditions of to-day. The seizure of Austria by Germany in March concerned the U S. government no further than to seek assurances that Germany would guarantee Austria's debt to the United States. Finally, Hitler's absorption of the Sudetenland in September led to no protest on the part of the American government, but only to President Roosevelt's personal appeal to the Fuhrer (as well as to Mussolini) not to defeat a peaceful transfer of the territory in question by a rash resort to war. To say that the American government preserved an attitude of detachment, or even of apparent indifference, in the midst of these stirring events in Europe and Asia, is not to imply that the American people were apathetic Probably in no year in American history, since the days of Thomas Jefferson and the French Revolution, have Americans been so convinced and so clamorous in their indignation and their admiration, in their censure and their sympathy, in their condemnation and their glorification of men and parties in the struggles of the Old World as they have been in the year 1938. (D. S. Mu.)

Area and Population :

Area 3,026,789 sq. miles.
Population (est. July 1, 1937) 129,257,000.
Chief Towns (1930 census): New York (6,930,446), Chicago (3,376,438), Philadelphia (1,950,961), Detroit (1,568,662), Los Angeles (1,238,048), Washington, cap. (486,869).

President. Franklin D. Roosevelt.

Agricultural Production, 1938 :

Wheat	940,000,000 bushels
Barley	253,000,000 ,,
Rice	53,890,000 ,,
Rye	52,500,000 ,,
Maize	2,480,958,000 ,,
Oats	1,041,577,000 ,,
Potatoes	368,203,000 ,,
Tobacco	1,470,922,000 lb.
Cotton	12,008,000 bales

Mineral Products, 1937 :

Petroleum	$1,530,000,000
Bituminous coal	$787,000,000
Pig iron	$731,139,000
Natural gas	$511,002,000
Iron ore	$207,828,000
Copper	$201,988,000
Anthracite	$197,599,000
Cement	$171,414,000
Gold	$167,723,000
Stone	$147,213,000

For further statistics, *see* above in the main body of this article.

UNIVERSITIES AND COLLEGES. Improved equipment and research facilities and an increasing stress on the welfare of the students again characterized the developments recorded by universities and colleges during 1938.

The promotion of visits by post-graduate students, teachers, and members of university staffs from the Dominions and foreign countries to universities in Britain has also been prominent. The Universities Bureau of the British Empire has, with limited resources, done its best to promote the interchange of scholars. The reciprocal scholarship

arrangements made by the French Government and British universities, the Thomas Carlyle Stipendium, the Carnegie Corporation grants distributed by the Universities Bureau to members of Dominion Universities, the annual allocation recently made by the Imperial Relations Trust to the Universities Bureau for grants to those interested in university administration problems in Great Britain and the Dominions, schemes for exchanges of lecturers in this country and in Switzerland, and the quinquennial congress of the universities of the Empire have been among the Bureau's activities. The British Council has provided funds to further these objects Some 152 students from other countries have been enabled to spend at least one session at British universities. About half are selected foreign teachers of English who come to England to improve their knowledge of the language and to acquire a knowledge of English life. The remainder are post-graduate students, selected by competition, who wish to undertake research Ninety-three of the students came from European countries, 26 from countries within the British Empire; 21 from countries in the Near East; seven from South America; and five from the Far East. The British Council also established professorships, readerships, and English Institutes in a number of European countries. It has also arranged for numerous lectures all over Europe.

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Bristol reports that a new library for the department of chemistry has been established and that extensions have been made to the biological laboratories and dental school A new department of radiology has been founded. Students admitted after Oct. 1939 will be required to undergo medical examination.

The new constitution of the university of Durham is working smoothly and making for increased efficiency in administration. A new university office was opened in Newcastle. A public appeal for buildings is meeting with a satisfactory response.

A new laboratory for histological teaching was provided in the department of anatomy of the university of Leeds. A course of training for serving probationer officers was instituted. A new Union building was completed and a director of physical training has been appointed.

The Harold Cohen Library of the University of Liverpool was completed. Buildings for the departments of histopathology and radiography were in course of erection. A post-graduate course in anæsthetics was instituted. A new gymnasium was opened, a lecturer in physical training was appointed, and the medical examination of first-year students was introduced. In Manchester work was begun on a new dental hospital and school. A doctorate in dental surgery and a certificate in social administration were instituted. At Reading a B.A. degree in fine art was established.

At Sheffield the Sir Robert Hadfield metallurgical laboratories were opened. A new building for the department of glass technology is under construction. A Bachelorship of Engineering in fuel was instituted.

The University of Wales approved the conversion of the Chair of Latin and Independent Lectureship in Greek at the University College of Aberystwyth into a new Chair of Classics, the institution of courses in biblical history and literature at the University College of North Wales as part of a scheme of study for the degree of B.A., and the recognition of agricultural science as an alternative to general science as a subject of the matriculation examination. The University College of Aberystwyth reports that the agricultural research block and dairy departments are nearing completion; at the University College of Cardiff plans for a new gymnasium and squash rackets courts have been approved; at the University College of Swansea the new library building was opened and a new gymnasium was completed; at the Welsh National school of medicine the Independent Lectureship in Pharmacology has been raised to a Professorship

At the University College of Exeter diplomas in public administration and social studies were instituted. An instructor in physical education was appointed. The University College of Nottingham reports that its supplemental charter, providing for the wider representation of the whole of the east midland area on the Court of Governors and on the Council, has been granted. A department of spoken language has been established for a provisional period of one year. Diploma courses in English studies and textiles have been instituted.

In Aberdeen the new medical buildings at Foresterhill have been completed and equipped. The University of Edinburgh accepted the offer of the General Assembly of the Church of Scotland to transfer to it the Chair of Christian Ethics and Practical Theology. A surgical research laboratory, with which the name of the late Sir David Wilkie is closely associated, was extended and opened by the minister of health. The King's Building common room has been erected on the University site at West Mains Road.

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In Ireland the Queen's University of Belfast established two new Lectureships in Astronomy and Physiology and two new adviserships in studies. In connexion with the first-mentioned appointment, arrangements have been made for co-operation between the University and Armagh observatory. Male student exchanges with the United States and Germany have been approved. At Trinity College, Dublin, Provençal has been added to the subjects of the courses in modern literature.

Canada. At the Dalhousie University, Halifax, a Medical and Dental Library were under construction. At Laval University in Quebec two new faculties—letters and science—were created, the former comprising (*a*) an École Normale Supérieure, for the preparation of professors for high schools and colleges of arts, and (*b*) a school of modern languages, and the latter, chemistry, biology, mathematics, mining and metallurgical geology departments, and schools of agriculture and surveying and forestry. At McGill University plans were approved for a cyclotron laboratory, and for the Sir Arthur Currie Memorial Gymnasium, the cost of the latter being largely met by graduates of the University. At Manitoba a B.Sc. in geological engineering was instituted. At Ottawa a seminary was opened for students of the ecclesiastical faculties. At the University of Saskatchewan a school of nursing was instituted and additions were made to the field husbandry building. At Queen's University new departments of industrial relations, art, and music were established. The Carruthers Hall (civil engineering) was reconstructed. A sanitary engineering laboratory, a hydraulics laboratory, and the Craine Hall

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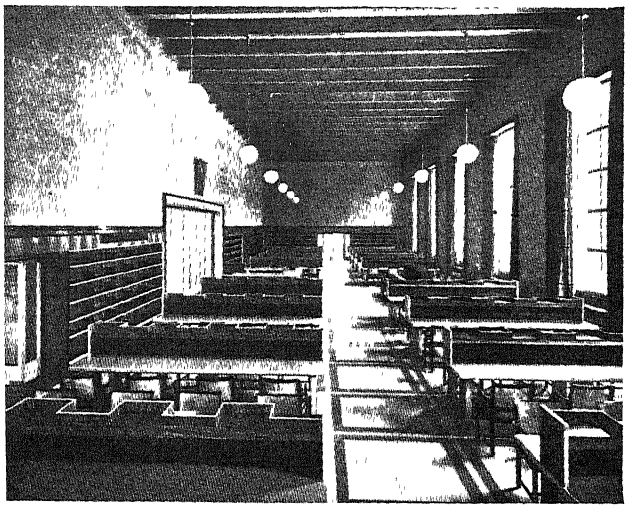
for biochemistry were opened At the University of Toronto a new residence for St Hilda's College with accommodation for 75 women students was completed Two-year diploma courses in aerial navigation for the training of pilots and operators were instituted At the University of Western Ontario a four-year course in home economics was instituted.

Australia and New Zealand. At Adelaide the George Murray Building (cost £11,500) and the Ranson Mortlake Laboratory at the Waite Agricultural Research Institute were completed. An institute of medical and veterinary science is in course of erection in the grounds of the Adelaide Hospital A faculty of engineering was created and a degree of Bachelor of Engineering was instituted At Melbourne a new chemistry school, provided by the government of Victoria and public subscription, was completed, and an X-ray and radium laboratory was opened A diploma in physical education and a Bachelorship of Engineering Science were established In Western Australia the building for the agriculture department was under construction. In Tasmania a D Litt was instituted. By act of parliament the University of Sydney is authorized to establish and maintain colleges outside the Sydney metropolitan area and has established the New England University College situated at Armidale, 360 miles from Sydney. Prince Henry Hospital was made available by the government for post-graduate research. In the University of Queensland a new department of physiotherapy providing a three-year diploma course has been instituted.

In the University of New Zealand the Canterbury and Massey Agricultural Colleges became a school of agriculture in connexion with the University of New Zealand, to be known as the New Zealand School of Agriculture.

South Africa. At Rhodes University College, one of the colleges of the University of South Africa, a new hostel for 55 women has been provided. At the University of Stellenbosch a new hostel for 102 women and a new library are being built. In Capetown a new building for the Bolus Herbarium and Library has been constructed, and additions to the geology building to house the department of geography have been made. Parallel classes in Afrikaans in subjects for M.B., Ch.B., a new degree course, M.A. in Social Science, and diplomas in native education and nursing have been established. Two large new recreation halls for the Otto Beit Students' Union have been built. At Pretoria a new section has been added to the faculty of theology to meet the requirements of the United Dutch Reformed Church. New departments of comparative veterinary pathology, animal breeding, and soil technology have been instituted.

India. At Agra a B.Sc. in pharmaceutical chemistry was instituted. At Allahabad a diploma in drawing and painting was instituted. At the Muslim University, Aligarh, degree classes were provided for women of the Muslim Girls' College, and a separate hall for women students was built. At Andhra a Bachelorship of Oriental Learning was instituted. Plans were approved for a new hostel, a technology building, and a combustible shed. At Annamalai a women's hostel was built, as well as a men's club and guest house. At Benares a canal was built to irrigate the university campus. A department of glass technology was created with courses of instruction for B.Sc. and M.Sc. in glass technology. At Dacca there will, in future, be two doctors' degrees instead of one in each of the faculties of arts and science. Four new departments, Bengali, political science, soil science, and physiology were established. At



THE MAIN READING-ROOM OF THE HAROLD COHEN LIBRARY OF LIVERPOOL UNIVERSITY, COMPLETED IN 1938

Delhi playing fields available for all colleges were provided. A separate building for the physics laboratory was under construction At Lucknow two research degrees, Ph D. and D Litt in the faculty of arts, and Ph D. and D Sc. in the faculty of science, were instituted. A library and a Students' Union building are under construction At Madras regulations for a diploma in librarianship were framed. Proposals for the institution of a B Sc. degree in pharmacy were being considered. At Calcutta new buildings were constructed for the Agricultural College at Barrackpore. At Travancore a new university was founded, its chief aims being to help reorganize the system of education in the state with a view to the gradual development of technical and technological education, to make greater and more systematic provision for the furtherance of original research in the various branches of applied science, and to provide for the conservation and promotion of Kerala art and culture. The university includes a number of colleges formerly connected with the University of Madras.

Burma. An Agricultural College at Mandalay has been established as a constituent college of the University of Rangoon.

Malta. A Chair of Archæology (with special reference to Mediterranean history) has been established with the aid of funds provided by the British Council. A British Institute is in process of formation.

Trinidad. Extensions to the low-temperature research station are reported from the Imperial College of Tropical Agriculture.

Palestine. At the Hebrew University of Jerusalem the Ratnoff Building of the medical school was opened. Plans are being prepared for the erection of the Rosenbloom Building for Jewish studies and the humanities and for a Jewish archæological museum. Italian and French language sections have been established.

Egypt. The Egyptian University, Cairo, has been assisted by the British Council and the Universities Bureau of the British Empire in filling vacant appointments.

China. The war has greatly curtailed university education in China. It has been estimated that omitting the professional schools, there were in the whole of China 47 universities and 35 colleges, and these, for the whole country, have now been reduced to eleven universities and six colleges. Several universities have been transferred to the western provinces, but have to carry on and work without proper buildings, laboratories, or libraries, which have been

looted and destroyed by the Japanese The advisers on the possibility of introducing teaching arrangements on the lines of the Oxford " Modern Greats " at the University of Yenching are still engaged in their work The creation in Yenching University of an Institute for post-graduate study and research has been mooted.

Bulgaria. At the University of Sofia an Assistant Reader of English has been appointed with the aid of funds provided by the British Council.

Denmark. At Copenhagen a new institute of genetics has been opened and new premises have been provided for the seminars of the various departments of the Faculty of arts. At Aarhus the development of the two new faculties of medicine and economics is progressing, and several new Chairs have been established. A third hostel for students has been completed

France. The University of Paris has entered into agreements with British universities to recognize their honours degrees in French, for the purpose of granting concessions to those desiring to take the Licence-ès-Lettres of that university. Instead of being examined for four Certificates, British graduates now need sit only the examinations for two. The French Government made a generous gift of educational books to libraries of universities in Great Britain and Ireland.

Greece. At Athens an Institute of English Studies was founded to work in conjunction with the University in the study of English language, literature, and institutions. The lists for enrolment had to be closed after the number of students registered had reached 3,000. At the University of Salonica, with the help of the British Council an Assistant Reader was appointed to teach English.

Iceland. In the University of Iceland a new research institute comprising chemical, agricultural, and fisheries departments has been founded. New university buildings are under construction.

Italy. A new university is being established at Trieste. Two new faculties of education were recognized at Urbino and Cagliari. At Turin, Milan, and Rome extensive building programmes, especially in connexion with medicine and higher schools of engineering, were being carried out. Numerous new technical schools—aeronautical, agricultural, chemical, and nautical—were founded. Legislation has been introduced to promote more detailed study of modern languages.

Latvia. At the University of Latvia a new faculty of Roman Catholic Theology was founded. From 1939 students will not be allowed to hold government posts.

Lithuania. At the University of Vytautas the Great a Chair of Physical Culture has been established. The economic situation of Lithuania is being specially studied.

Poland. At the Stefan Batory University at Vilna, the school of agriculture has been made a faculty. The Catholic University of Lublin has been raised to university standing. At the Free University of Poland in Warsaw a Licence-ès-Lettres has been instituted. An institute of the law and of the economic problems of aviation has been established in connexion with the faculty of law of the J. Piłsudski University at Warsaw. Special arrangements have been made for financial aid to gifted necessitous students, and grants have also been made to provide lodging, food, and other necessities at a minimum charge. The following buildings were under construction during 1938 : The Jagiellonian Library and the oto-rhino-laryngology clinic, at Cracow, chemical laboratories at the J. Piłsudski University at Warsaw, buildings for the mechanical engineering faculty of the polytechnic school, and orthopaedic and gynæcological clinics at the medical school, at Lwow

Rumania. Three hundred pupils are now attending courses at the University of Bucharest's new department of English language and literature. Under the auspices of the British Council a British Institute has been established and an appointment has also been made to the Chair of English at the University of Cernauti. Summer courses of English studies have been held in Sinaia under the auspices of the University of Bucharest and the University of Cluj. The faculty of law of the University of Bucharest has been provided with new buildings.

Scandinavia. Denmark, Norway, Sweden, Finland, and Iceland agreed that a common Nordic University should be founded, Gothenburg, in Sweden, being mentioned as a suitable seat. A scheme of extensive cultural and educational collaboration was outlined. More time is to be devoted to the teaching of the Nordic languages, and history text-books are to be revised.

Turkey. At the University of Istanbul a course in linguistics for teachers has been instituted. Research institutes, particularly in the faculties of science and medicine, continue to be equipped with modern apparatus.

U.S.S.R. The number of institutions of higher learning was 635, of which six are specifically devoted to the study of physical culture and sport. The number of full-time students attending these institutions was 537,918.

United States. Not only the student enrolment and the financial condition of American Universities, but the curricula as well, have a definite relationship to the curves of the business cycle. During the major depression there was a steady annual increase in student registration for courses in business and finance, and a corresponding decrease in registration for courses in the arts and sciences. A survey of 516 universities and colleges conducted by Dr. Raymond Walters of the University of Cincinnati showed that the number of freshmen students in commercial subjects increased twelve per cent in 1935, fourteen per cent in 1936, and thirty-three per cent in 1937. In the autumn of 1938, however, this trend was arrested ; and there was an indicated decrease of 1·3 per cent -undoubtedly a reflection of the 1936 and 1938 upswings in business. At the same time, 5·7 per cent more students registered for liberal arts subjects than in 1937 - the first such increase for several years.

Dr. Walters' 1938 report on enrolment statistics revealed an increase of 6·6 per cent in full-time student enrolment over 1937. Another survey of 31 Canadian colleges and universities showed a 0·2 per cent increase in the total number of students.

The privately endowed universities of the United States have watched with increasing apprehension the continued drift of students towards the state-supported institutions. A report of the General Education Board issued in Oct. 1938 revealed that during the years 1928–37 the percentage of enrolment increase in state institutions was approximately seven times that of private universities. This trend continued in the autumn of 1938, when universities under public control again reported a 7·3 increase in attendance, while private universities had only a 2·2 per cent gain.

The majority of non-public colleges and universities have attempted to combat this situation with aggressive methods of " recruiting " students—a practice which was deplored by the Carnegie Foundation in its 1938 report as unethical, unacademic, and likely in the end to lead to unrestrained competition for tuition-paying students on a large-business scale.

The chief gadfly of United States higher education during

the year was again President Robert M Hutchins, of the University of Chicago, who continued his attacks upon the semi-professional, " practical " courses of study in schools of commerce, education, journalism, etc. Hutchins also advocated combining the last two years of the present United States high school with the first two years of college into a new educational unit leading to a regular bachelor's degree. His thesis was partially borne out in at least one experiment, the " Louisville Plan ", under which high-ranking students are permitted to enter the University of Louisville as regular freshmen after three, instead of four, years of high school study. The university reported in July that many of the special students ranked scholastically above even the superior regular students

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UROLOGY. Recent progress in urology may be considered conveniently with reference to the various anatomical parts of the urinary tract.

Kidney. *Renal Hypertension.* The experimental work of Goldblatt has been confirmed by other workers, both in the laboratory and in practice. In the clinical investigation of such cases, the urinary tract should be examined systematically. If a unilateral renal lesion is discovered, removal of the kidney is followed by lowering of the blood-pressure to normal levels. This appears to be a specific effort produced by the removal of some pressor substance elaborated in the kidney, and not one produced through the sympathetic nervous system.

Hydronephrosis. There is now general agreement that, where a normal second kidney is present, nephrectomy is the operation of choice. The findings of Walters, Cabot, and Priestley in a series of 46 cases in which plastic reconstruction had been performed are of great interest. Secondary nephrectomy was necessary in 21 per cent, and unfavourable results did not appear to be associated with any particular type of operation.

Tuberculosis. Mathé reviewed 4,698 cases of unilateral renal tuberculosis occurring in children, and confirmed the principle that nephrectomy is the correct treatment. Occlusion of the ureter with cessation of symptoms occurred in ·5 per cent only, and was always associated with the risk of fresh activation of the infection.

Pyelonephritis. Braasch, discussing 200 recent cases of pyelonephritis at the Mayo Clinic, recorded the infecting organisms as of the *B. coli* group in 55 per cent, and as staphylococci in 14 per cent, but the latter only recoverable from the urinary sediment, the urine on culture being sterile. Lavage of the renal pelvis, which used to be the principal form of treatment, is now reserved for cases of excessive pyuria, and chemotherapy is the most valuable agent. In a series of 526 cases of pyelonephritis, operative interference was only necessary in 3 per cent. Infection should be controlled by drugs in the early stages before secondary cicatricial deformities from inflammation have taken place.

Neoplasm. Recent series of case reports have emphasized the value of preoperative radiotherapy in Wilm's tumour of infants, other types of tumour being relatively radio-resistant. The optimum time for nephrectomy is six weeks after radiation. In tumours of the renal pelvis, total nephro-ureterectomy is essential to avoid seedlings in the remaining part of the ureter.

Bladder. *Carcinoma.* The treatment of this condition still leaves much to be desired. Higgins recorded 34 cases of total cystectomy with ureteral transplantation He emphasizes the importance of operating before ureteral dilatation and renal infection have occurred. Wade reported a mortality of 50 per cent. for ureteral transplantation in carcinoma and stresses the value of intravenous infusion of sodium sulphate, which renders simultaneous bilateral transplantation possible. The value of deep X-ray therapy is discussed by Graves and Dresser, who conclude that such treatment has no curative value, but is useful in checking hæmorrhage. In the event of a subsequent operation becoming necessary, the tissues will certainly heal more slowly than usual. Barringer reported on a series of 215 cases treated by radium and produced three-year cures in 32 per cent and five-year in 24 per cent. Tumours at the base encroaching on the urethra and ureters, as do 75 per cent, are best treated by radiation In the presence of renal infection and ureteral dilatation, cystoscopic implantation of radon seeds is preferable to open operation. Deep X-ray therapy alone he found quite valueless. For single infiltrating tumours Smith found electro-coagulation disappointing and advises resection of the entire thickness of the bladder wall with implantation of radium well outside the indurated area. On the other hand, Randall and Uhle reported a series of 51 cases treated by diathermy with a mortality of 10 per cent, and regard the method as of distinct value.

Prostate. *Benign Hyperplasia.* In spite of numerous statistics from various clinics, there is still wide discrepancy of opinion as to the indication for the various forms of treatment. In most clinics transurethral resection is reserved for cases unsuitable for open surgery, either by virtue of impaired renal function or because the amount of obstructing tissue is small.

Testis. *Imperfect Descent.* Mimpriss considers that the anatomical results of orchidopexy are better if the operation is postponed until puberty, as up to this age spontaneous descent may occur. The most satisfactory orchidopexy is the Keetley-Torek. Hormone therapy should be reserved for cases of delayed sexual development only. All cases of established mechanical ectopia in the presence of normal development should be operated upon. Indiscriminate hormone therapy may produce precocity without any effect on the ectopic testis. (R. H. R.)

See Goldblatt, H. J., *Jour. Exper. M* 1938, 67, 809; Mathé, C. P., *Arch. d. Mal d. Reins*, 1934, 10, 517; Higgins, C. C., *Surg. Gynec. and Obst.*, 1938, 66, 549; Randall, A. and Uhle, C.A.V., *Surg. Gynec. and Obst*, 1938, 66,927.

URUGUAY, South American Republic; president, General Alfredo Baldomir; area, 72,153 sq. m.; pop. (1933) 1,993,234; (estimated, 1938) 2,087,910; with a large Italian admixture, and a greater percentage of white than in any American country except Argentina and Canada; chief cities: Montevideo, the capital, 658,284; Paysandú, 40,000.

From 1933 to 1938 Uruguay was under the practical dictatorship of President Gabriel Terra. The presidential election of March 27, which chose his successor, however, was conceded to have been honest. General Alfredo Baldomir, Terra's brother-in-law, who had campaigned on a platform of anti-fascism, was victorious in a three-cornered contest, receiving 37 per cent of the vote, and entered into office on June 19. In October, President Baldomir joined in efforts to mediate the Peru-Ecuador boundary dispute, and in November recommended to Congress the resumption



Royal Mail Lines]
PLAZA DE LA INDEPENDENCIA, MONTEVIDEO, WITH THE PORT AND THE CERRO IN THE BACKGROUND

of diplomatic relations with the Vatican, broken since 1915 On Dec. 28, when an Italian cruiser on a world "prestige tour" visited Montevideo, Italian sailors and Uruguayans engaged in serious street fights.

Uruguayan national economy centres around the livestock industry, which supplies over 95 per cent of the exports, with agriculture (especially cereals) secondary but important. National prosperity, therefore, depends upon the vagaries of a highly competitive world market. During 1938 Uruguay was adversely affected by the world economic recession and price decline of 1937, accentuated by bad weather conditions which reduced production. Government policy, consequently, was directed towards stabilization of markets through restriction of imports to products of countries buying from Uruguay. Arrangements were made with Mexico for purchase of all oil needs for 1939 with 30 per cent of the price to be covered by Uruguayan goods. Late in December, conclusion of a barter agreement with Italy, exchanging wheat for armaments, was announced following the return of former President Terra from a visit to Italy. This, coming on the heels of the Lima declaration against such agreements, subscribed to by Uruguay, aroused violent foreign criticism.

Education. Education is compulsory and free. There are nearly 2,000 elementary and secondary schools, with over 200,000 enrolment. The National university at Montevideo ranks high.

Finance. The monetary unit is the peso, valued (Dec. 1938) at 1*s.* 6*d.*, a 33 per cent decline during the year.

Trade and Communications. There are approximately 1,730 miles of railway, and a well-developed highway system. In 1936 imports (oil, sugar, and coal) were 65,935,000 pesos, and exports (livestock products, principally wool) 90,299,635 pesos. Trade with the United States has declined materially, with a 67·7 per cent decrease in exports in the year 1937–38, although imports from the United States rose 7·7 per cent. Japanese, German and Italian trade is increasing. (L. W. Be.)

U.S.S.R. (THE UNION OF SOVIET SOCIALIST REPUBLICS). Important administrative reforms carried out in 1938 include the formation in January of the Commissariat of Agricultural Stocks, the reorganization of the State Planning Commission on Feb 2, and of the Commissariats of Water Transport and of Health (March and October), and the creation under the Council of People's Commissars of a special Committee on Construction for the supervision of the entire building industry (Feb 26), and of an All-Union Committee on the Cinema (Mar 23). In January the State Bank of the U S S R., formerly administered by the Commissariat of Finance, became an independent body, subordinated directly to the government

At its first session from Jan. 12 to 19 the Supreme Council elected its Præsidium under the chairmanship of Kalinin, appointed the Government of the Soviet Union under Molotov, and elected Vyshinsky as Prosecutor of the U S.S R. Of importance also were amendments passed by the Supreme Council of several paragraphs of the new Constitution with the object of creating new administrative sub-divisions in the separate Union Republics, as well as new Commissariats of the All-Union government. Finally the Præsidium of the Supreme Council has been empowered to declare martial law in certain areas or alternatively in the whole Union in the interests of the defence of the country and of the maintenance of social order. Neither in the old Constitution of 1924 nor in the new one of 1936 had this matter been settled.

The second session of the Supreme Council, Aug. 10–21, met to pass the All-Union budget of 1938 as well as a number of other noteworthy legislative matters. By a new citizenship law of Aug. 19, the former inadequate procedure in relation to naturalization and expatriation as well as voluntary withdrawal from the Soviet Union was readjusted. While decisions in questions of nationality had so far partly been left to local administrative bodies, from now on they became exclusively the province of the higher central authorities. Of great importance—as a principle in any case—was the new judiciary law adopted on Aug. 16, which aimed among other things at the democratization and simplification of the Soviet system of justice. Among its main innovations was the provision that all People's Courts in the U.S.S.R. are to be elected by the whole local population; all judges are to be independent and subordinated only to law; all trials must be public and all accused are to have the right to defence and to the use of their mother tongue. On the other hand, the number of persons who could appeal against a decision, as well as of the authorities who could review the appealed case, was considerably limited. The hitherto little-known Ivan Golyakov was elected President of the Supreme Court of the U.S.S.R. By a special decree of the Supreme Council of Aug. 20 the procedure for the ratification or denunciation of international treaties was also re-constituted. Details of the laws adopted by the Supreme Council as well as the decisions of its Præsidium can be found in the special publication *Vedomosti Verkhvnogo Soveta S.S.R.* which has been appearing since April 1938.

In June elections to the Supreme Councils of the individual Republics, Autonomous Republics, and Autonomous Provinces took place all over the Union. At these elections a high percentage (96–99 per cent) of the electorate voted, and more than 99 per cent of the votes polled in all the Union Republics were given for the only admitted candidates of the "Communist and Non-Party *blocs*". Simultaneously with these "parliamentary elections" the Communist Party elections in the U.S.S.R. were carried out, with the result that in many Party organizations one-third to one-

half of the newly-elected secretaries and committee members were new arrivals.

The ruthless campaign against the alleged Trotskyists, Fascists, wreckers, saboteurs, traitors, spies, terrorists, plotters, and double-dealers in the Party and in the different branches of the State administration as well as in the Army and Navy, was continued throughout the entire Union during 1938. The repressive methods used were mainly the old ones · spectacular trials, executions by shooting after long imprisonment, arrests, banishments, loss of office, expulsion from the Communist Party, deprivation of citizenship (416 persons in September alone) and of distinctions previously granted, etc. The Central Committee of the Communist Party was forced, however, on Jan. 19 to pass a long-winded resolution condemning in very plain language the mistakes made in the hitherto mass expulsion of Communists from the Party. Wholesale expulsions without any discrimination had thereafter to be stopped, and the Party leaders responsible for these offences were in their turn to be removed from their posts in the Party, but even these drastic measures have not brought the results which many expected from them.

The greatest political mass-trial of 1938, that of the so-called " Right Trotskyist *bloc* " took place in Moscow before the military tribunal of the Soviet Supreme Court from March 2 to 13. Of the 21 accused, most were Old Bolsheviks and until recently leading figures in Russia, among them being Rykov, the ex-prime minister, Krestinsky, formerly Assistant-Commissar for Foreign Affairs and Ambassador in Berlin , Rakovsky, former Ambassador in London and Paris ; Rosengolz, former Commissar for Foreign Trade and Chargé d'Affaires in London ; Bukharin, the former chief-editor of the official *Izvestya* and author of the famous *ABC of Communism* ; Yagoda, the most dreaded man in Russia and for many years the Head of Soviet Secret Police ; Grinko, former Commissar of Finance and Director of the Five Year Plan, and others. These people were among other things accused of having relations with Trotsky, the " enemy of the people ", and of espionage work not only for the German and Japanese but also for the British and Polish intelligence services ; as well as the organizing of counter-revolutionary plots which aimed at the overthrow of the socialist society in the U.S.S.R. and the restoration there of capitalism by means of terrorist and treasonable activities, at the undermining of the economic power of the Union and at the defeat and the dismemberment of the U.S.S.R. Doctors Levin and Pletnev were, together with others, even accused of the murder of the famous Russian writer Maxim Gorky by means of wrecking methods of treatment. Most of the crimes were said to have been committed since 1932, some even as far back as 1918. All the accused—including Krestinsky after some hesitation—admitted their guilt and played up very well to even the most fantastic accusations of the prosecutor Vyshinsky. Eighteen of them were shot. Rakovsky, Pletnev, and the former counsellor of the Soviet Embassy in Berlin, Bessonov, were sentenced to terms of imprisonment of from 15 to 25 years.

Among the other more prominent victims of the sweeping purge in 1938 were Krylenko, one of Lenin's Old Guard, himself till recently Commissar of Justice, accused of deliberately discrediting Soviet Law ; and the 35-year-old Kosarev, since 1926 secretary and leading spirit of the Young Communist League, "liquidated" in November together with two of his secretaries and two other members of the Central Committee of the League on the political charges of violation of democratic principles, bureaucratic practices, self-glorification, incompetence, and lack of vigour in combating the Soviet's enemies. According to persistent rumours the half-legendary Marshal Blücher, Commander-in-Chief of the Far Eastern Red Army, is also said to be under arrest in Moscow since the autumn of 1938 Considerable personal changes have taken place in 1938 even in the higher ranks of the Secret Police, where many officials have been replaced by staunch supporters of the Stalin regime. And at the beginning of December, Yezhov, the chief organizer of the above-mentioned trial of the " Right Trotskyist *bloc* ", was forced to resign from his post as Commissar for Internal Affairs and Head of the Secret Police He was succeeded by Lavrenty Beria, a Georgian, former Party Secretary for Trans-Caucasia.

The drive against religion was intensified in 1938 and led to the arrest of numerous higher Church dignitaries and clergymen, generally accused of being " fascist spies and terrorists in priests' robes ". A number of Jewish Rabbis and Zionist sympathizers were also arrested on similar charges.

In the economic sphere 1938 was the first year of the third Five Year Plan, the outlines of which were published only in Jan. 1939 The second Five Year Plan, which ended on Dec. 31, 1937, was a success for the heavy and food industries of the country, which achieved an over-fulfilment of the Plan by respectively ten and eight per cent The light and timber industries were, on the other hand, not able completely to fulfil the tasks allotted to them for this period According to the latest estimates the total result of the Union's industries in 1938 ought to be even as much as 21 per cent greater than in 1937. A government decree of Jan. 8 regulated the question of funds to be set aside by industry for amortization and repair work ; reorganization of the building industry was initiated in February ; and on Oct. 21 steps were decided upon by the government in collaboration with the Central Committee of the Communist Party to increase productivity in the coal basins of Kuzbass, Moscow, the Urals, Karaganda, and Central Asia, the unsatisfactory output of which was all the more disadvantageous because it was from them that, according to plan, 35 per cent of the fuel of the country was to be obtained. For the rest, the striving for higher quality even at the cost of quantity may be regarded as significant of the most recent phase of the development in Russian industry. On the other hand, it did not prove possible even in 1938 to abolish exorbitant prices, shortage of different consumer goods, and mal-distribution of food products. At the end of 1938 a number of strict measures were taken by the Soviet government in order to combat the labour flux and to tighten up labour discipline, the most important of which was the reintroduction of " labour booklets " including a conduct sheet for each factory-worker and employee. The social services too were changed and made dependent upon the duration of the work with a given enterprise. Even the former maternity leave of four months was reduced by half. At the same time a new title " Hero of Socialist Labour " was created and is to be awarded for outstanding pioneering work.

The agricultural plan for 1938 (*see* below) was laid down by the Soviet government on Jan. 28 for the first time to include the whole year. Through a number of measures the government attempted to improve the position of the members of collective farms in Soviet society, and to strengthen their support for the regime. The collective farmers working in the coal, peat, and timber industries were, for

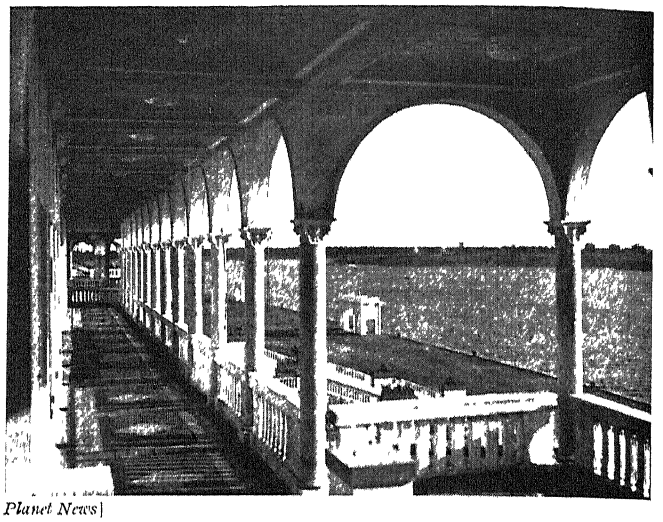
example, exempted from the agricultural tax and granted other privileges (*cf.* the decrees of Feb. 14 and May 26) A further decree of April 19 severely criticized the unjust distribution of the monetary revenues in collective farms to the detriment of their members, and stipulated that henceforth at least sixty per cent of all the cash income of a farm had to be distributed among the individual farm members, rather than to be allocated for capital and administrative expenditure. (In 1937 in some regions collective farmers received for their work only farm products and no money payment) Another sharply worded decree, also of April 19, ordered an immediate stop to the totally unjustified mass expulsion of peasants from the collective farms, carried out on the most insignificant pretexts A new order on April 24 finally prescribed prompt attention to all the appeals launched against these unlawful ejections from the collective farms. On the other hand, the situation of the approximately 1½ million individual peasant households still remaining seems to have become in 1938 even more difficult, as new pressure was brought to bear to force these peasants into collective farms. The government, together with the Central Committee of the Communist Party, on April 19 urged the local State and Party Authorities " to cease their anti-state and anti-kolkhoz practice of indulging private holders " and to end the practice of exempting them from government taxes and state grain and meat levies. Also, by the special state tax on horses belonging to individual holdings, decided upon on Aug. 21, a further profitable source of income was taken from them. The opening of the big All-Union Agricultural Exhibition was once more postponed, this time until Aug. 1, 1939, owing to the inadequacy of the preparations.

According to official information the State budget for 1937 has been balanced with an increase of 14·8 per cent in revenue and 14·9 per cent in expenditure in comparison with the budget for 1936. In the course of 1938 two further loans were floated : the first on June 1, a 20-year internal loan of 600 million roubles largely intended for the conversion of the previous loans; and only one month later, on July 1, another 20-year loan of 5,000 million roubles for industry and defence. The second loan was by the middle of August already over-subscribed by about 900 million roubles.

A new All-Union census is to be taken between Jan. 17–26, 1939, the results of that of Jan. 1937 not having satisfied the government. In the specially inaccessible parts of the Union, however, the counting had already begun in the late autumn of 1938. Among the questions asked were included one relating to religious belief, but, significantly enough, none this time as to social origins.

On Feb. 23 the Soviet Union celebrated the 20th anniversary of the founding of the Red Army and Navy. More than 25,000 officers and soldiers were on this occasion decorated with a special Jubilee medal, and a limited amnesty for military prisoners was declared at the same time. On Oct. 17 two new war medals—" For Bravery " and " For War Service "—were instituted. Both these decorations carry with them a small monthly pension and free transport on tramways in all towns in the Union. No new official figures have been furnished in 1938 as to the strength of the Soviet Russian defence forces. Special attention seems recently to have been devoted in the U.S.S.R. to questions of coastal defence, and to the construction of fortifications on the Western frontier of the Union.

Noteworthy in the cultural sphere is the working out in September of a uniform statute for all higher educational



Planet News]

THE MOSCOW–VOLGA SHIP CANAL. PART OF THE STATION AT THE MOSCOW PORT

institutions of the Union, in which rights and duties of students and teachers were clearly laid down. At the same time the authority of the principals of these institutions in all questions of administration, programme, and discipline was considerably strengthened. The struggle for socialistic realism against " bourgeois and abstract formalism " was carried on in 1938 in all spheres of art in the Soviet Union. After the disgrace in 1937 of Meyerhold, one of the leading Soviet producers of the revolutionary years, for " leftist tricks, formalistic stunts, and slanderously representing Soviet reality ", his theatre in Moscow was closed in 1938 as " alien to Soviet Art ". Symptomatic, also, of the changing spiritual situation in the U.S.S.R was the encouragement of national pride and patriotism among the Russian masses, and the consciously emphasized and ever-growing recognition in official circles of the value and significance of the heritage of the past. The Jubilee of the national poem *The Tale of the Host of Igor*, dating from 1288, was, for example, celebrated in 1938 on a very large scale. And even the Baptism of the Russian people in 988 has been widely commemorated in Soviet Russia.

In foreign politics Moscow continued to co-operate with the League of Nations and the democracies. The strengthening of the League and not its emasculation was, according to Soviet Russian ideas, the demand of the hour in the interests of peace. Consequently the U.S.S.R. abstained from voting on a resolution adopted in the League Council on May 14, granting Switzerland exemption from the obligations of the Covenant and giving her a special position. The Soviet Union was further definitely against all attempts of the other Powers to deprive the sanctions paragraphs of the League Covenant of their obligatory character. The change of Russian foreign policy, feared in many places after Stalin's letter of Feb. 12 to the Young Communist, Ivanov, on the external tasks of communism, did not after all take place. Only by the wholesale closing of the foreign consulates in the Union did the U.S.S.R. shut itself up more and more during 1938 from the outer world.

In the Spanish question the Soviet Union, after long opposition, accepted on July 5 the modified British plan for the withdrawal of foreign combatants, stipulating that, while the volunteers were being counted, not only the Spanish land frontiers were to be closed to munitions deliveries, but that international observers were to be stationed simultaneously in Spanish ports. After the *Anschluss* the Soviet government on March 18 proposed the calling of an inter-

national conference, excluding Germany, Italy, and Japan, with the object of discussing collective measures necessary to prevent further aggression. The suggestion, however, found no acceptance from the other Powers. And in the crisis over Czechoslovakia, the Soviet Union again and again on various occasions, and at last publicly at Geneva on Sept. 21, declared her determination to honour her legal obligations towards Prague and to come to her aid if attacked and provided France did likewise. For in accordance with the Czecho-Soviet Pact, the U.S.S.R. was only bound to render military assistance to the Czechoslovak Republic if France would defend her ally in Central Europe

The relationship between the Union and Great Britain suffered from the recent general trend in European politics. The Soviet Union—as later also at Munich—was excluded from the discussions in London over the Czech question, and Moscow viewed with suspicion the efforts to conclude a Western Four-Power Pact. The principle of parity in the number of consulates maintained by each country in the territory of the other, newly adopted by the Soviet government, and the request based thereon to close the British Consulate-General in Leningrad, led in March 1938 to the regrettable abolition of both former British consulates in the U S.S R. and also of the Soviet Consulate-General in London. Since then every British subject wishing to visit the Soviet Union has to apply for a visa to a Soviet Consulate outside England. The arrest in Moscow in Aug. 1937 of Mrs. Rose Cohen, a British Communist and for many years editor of the *Moscow Daily News*, on charges of espionage and conspiracy, without notification to the Embassy, led in April 1938 to strong representations on the part of the British Ambassador in Moscow, but the Soviet government defended their action on the ground that Mrs. Cohen had in 1937 already adopted Russian nationality.

Many criticisms were made in the British House of Commons and elsewhere about the Anglo-Soviet temporary commercial agreement of 1934, especially with regard to the disproportion in the distribution of Soviet purchases in the British market between exports and re-exports, as well as the inadequate participation of British shipping in the carrying of goods from and to the U.S.S.R. As successor to Viscount Chilston, who retired in November, Sir William Seeds, formerly Ambassador in Rio de Janeiro, was appointed Ambassador in the U.S.S.R. On July 6 the U.S.S.R. and Great Britain signed a Naval Pact in order to bring the previous Anglo-Soviet Naval Agreement of July 1937 for the limitation of naval armament into accord with the new 45,000-ton limit for battleships set by Great Britain, the U.S.A., and France.

Friendly relations between Soviet Russia and the United States were somewhat strained at the beginning of 1938 by the arrest in Russia of an American citizen, Mrs. Ruth Rubens, alias Mrs. Donald Robinson, on suspicion of espionage. Contrary to the right guaranteed by the Recognition Agreement of 1933 with the U.S.S.R., an American diplomatic official was not permitted for a considerable time to interview her in prison. On Aug. 5, 1938, the Soviet-American Trade Agreement of 1937 was extended for a further year. The Soviet Union renewed her guarantee to buy in this period at least 40 million dollars' worth of American goods, in return for which, the U.S.A. further granted most-favoured-nation treatment to the U.S.S.R. A limit of 400,000 tons for the shipment of Soviet coal to the States during the twelve months was, however, agreed upon.

Incidents on the Soviet-Manchukuo frontier, detention of ships and citizens on charges of espionage, notes of protest against flying over foreign territory, and mutual accusations in political speeches, have been for a long time the order of the day in Russo-Japanese relations. The Changkufeng incident, threatened, however, in the summer of 1938 to develop into a major conflict (*see* RUSSO-JAPANESE BORDER CONFLICT).

The differences over the extension of the Russo-Japanese Fisheries Convention expiring in Dec. 1938 were not settled by the end of the year despite prolonged negotiations and the threats of Japan. For strategical reasons the Soviet Union categorically refused to include about forty fishing grounds in any new convention.

Relations with Germany continued strained during 1938, and this considerably damaged the trade between the two countries Formerly the chief source of supply of the Union, Germany, up to July 1938, held only the seventh place in the export of goods to Russia. On March 1 the Soviet-German agreement regulating mutual commerce and mutual payments was extended until Jan. 1, 1939, and after Hitler's annexation of Austria negotiations were opened with the object of including formerly Austrian territories in the existing trade arrangements between the U S.S.R. and Germany.

On Jan. 14 the Soviet government prohibited all further payments to Italy on the ground that certain Italian firms as well as the Italian Admiralty were refusing to pay their debts to the U S.S R. for petrol and other goods delivered. On the other hand, Rome accused the Soviet Union of owing Italy millions of lire, and in February the Italian government seized Soviet assets in Italy in order to satisfy the claims of the Italian firms which had executed orders for the U.S.S R. but remained, it was alleged, unpaid.

Soviet-Rumanian relations were disturbed early in 1938 first through the formation of the fascist cabinet under Goga, and in February by the mysterious disappearance of the Soviet chargé d'affaires, Butenko. The Soviet government held Rumanian official quarters to be responsible for the alleged kidnapping of the diplomat. Later, however, Butenko was said to have turned up in Rome, whence he made sharply anti-Bolshevik statements.

Relations with Poland, on the other hand, changed notably and significantly in the course of 1938 from mutual mistrust and antagonism to warm friendship. The summer saw an exchange of diplomatic notes about the surveillance to which officials of the Soviet Embassy in Warsaw—and the Polish in Moscow—were alleged to be subjected. On Sept. 23 Moscow gave Warsaw definitely to understand that the Soviet Union would at once denounce its non-aggression pact with Poland if the latter invaded Czech territory—which actually amounted to a veiled war threat. However, the outcome of the Czech crisis, the disappearance of Czechoslovakia as an independent factor to be reckoned with in the immediate future in high politics, the danger of a further German expansion in a south-easterly direction, and the apparent plan of Hitler to use Sub-Carpathian Russia as a kind of Ukrainian Piedmont for the formation of an independent Greater Ukraine at the expense of Poland and of the Soviet Union, forced these two eastern States to revise their former policy and, apparently not without success, to seek a *rapprochement*. On Nov. 26, after exhaustive negotiations, the conclusion of a Soviet-Polish agreement of friendship was announced in Moscow and Warsaw, whereby both governments re-affirmed their desire to base their relations on the non-aggression pact of 1932 existing between the two countries. Railway transit

between Poland and the Soviet Ukraine was shortly afterwards extended, and on Dec. 21, after five days' preliminary talks with a Polish trade delegation in Moscow, it was agreed to increase twenty-fold the former commercial turnover between the two countries.

Up to the end of 1938 there was no formal repudiation either of the Soviet-Czech or of the Soviet-French pacts.

Area and Population. Area: 8,168,559 sq. miles; population (1937 estimates): 180·7 millions (43 per cent born after the revolution), of which 46·1 millions (nearly 25 per cent) are urban and 134·6 millions rural. In 1926, Russians were about 53 per cent of the population, Ukrainians 21·2 per cent, White Russians 3·2 per cent, Kazakhs 2·7 per cent, Uzbeks 2·6 per cent, Tatars 1·9 per cent, Jews 1·7 per cent, Georgians 1·2 per cent. The social composition in 1937 was: workers and employees 34·7 per cent, collectivized peasants and co-operative craftsmen 55·5 per cent, individual peasants (other than kulaks) and craftsmen 5·6 per cent, other sections of population (students, army, pensioners, etc.) 4·2 per cent. In language, the population of the U.S.S.R. belongs to the following groups: Indo-European, Caucasian, Semitic, Finno-Ugrian, Samoyede, Turkish, Mongol, Tungus, Palæoasiatic, and the Far Eastern civilized languages (Chinese, Japanese, etc.). Altogether 141 languages are spoken in the U.S.S.R.

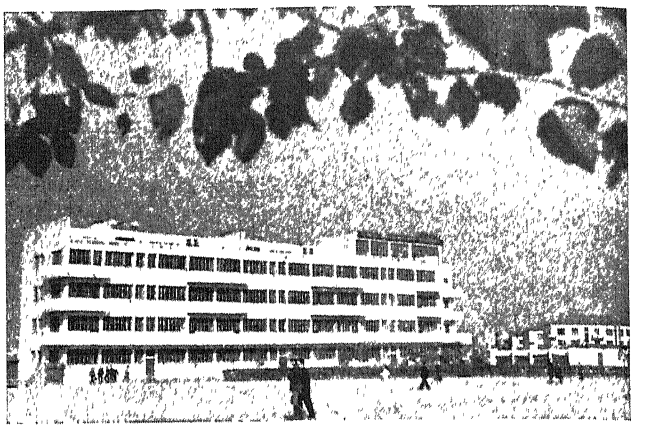
Cities of over 500,000 inhabitants are: Moscow (1936) 3,567,900, Leningrad (1935) 2,739,800, Baku (1935) 670,000, Kiev (1935) 625,000, Kharkov (1935) 625,000, Tashkent (1935) 532,000, Gorky, formerly Nizhny Novgorod, (1935) 512,000, Odessa (1935) 509,000.

Agriculture. Agricultural plan for 1938: Area under spring sowing 224,376,644 acres; summer ploughing of fallow lands 80,657,641 acres; winter sowing of grain 90,140,551 acres; autumn ploughing 167,790,411 acres. There were 243,700 collective farms; 4,137 state farms; 374,600 collective stock farms; 1,337 state stock farms; 6,158 machinery and tractor stations with about 400,000 tractors. The 1937 harvest was a record one of about 113 million tons of grain. Yield of sugar beet (1937): 211 million centners; yield of cotton (up to Oct. 20, 1938) 1,793,900 tons. According to the live-stock census taken on Jan. 1, 1938, there were in the U.S.S.R. 16·2 million horses; 28·2 million large horned cattle; 66·6 million sheep and goats; 25·7 million pigs and 22·7 million cows.

Commerce and Industries. Retail trade turnover (1937): 143 milliard roubles. Foreign trade: on April 22, 1938, the U.S.S.R. celebrated the twentieth anniversary of the establishment of the foreign trade monopoly. The total turnover of Soviet foreign trade (1918–1938) was 80,211·7 million roubles, of which imports amounted to 41,315·6 millions. Every year since 1933 has, however, shown a favourable trade balance.

The foreign trade turnover (1937) was: exports 1,728·6 million roubles and imports 1,341·3 million roubles; and from January to July 1938: exports 647,288,000 roubles and imports 836,511,000 roubles. The figures for the corresponding period of Jan.–July 1937 were exports 827,663,000 roubles and imports 796,422,000 roubles.

In the first seven months of 1938 exports from the U.S.S.R. consisted of 50·1 per cent raw and semi-manufactured materials, 27·6 per cent foodstuffs, and 22·3 per cent manufactured goods. Noticeable was a very considerable increase in the export of grain in comparison with the decrease in the exports of timber, petroleum products, furs, and cotton. Exports from the U.S.S.R. went mainly to Great Britain, Belgium-Luxemburg, and Germany.



Planet News]
A TECHNICAL SCHOOL, ATTACHED TO THE HEAVY MACHINERY WORKS AT SVERDLOVSK IN THE URALS

Eighty-seven per cent of all the U.S.S.R. imports were goods for industrial purposes, and consisted of 45·5 per cent manufactured goods, 40·4 per cent raw and semi-manufactured materials, 11·9 per cent foodstuffs, and 2·2 per cent livestock. Imports of machinery, electrical materials, non-ferrous and ferrous metals have increased in comparison with 1937. The principal sources of the U.S.S.R. imports were, Jan.–July 1938 (in thousand roubles): U.S.A. 230,515, Great Britain 126,608, Iran 58,130. Germany, in 1937 the leading source of Soviet imports, occupied the seventh place, following Holland, Australia, and Belgium-Luxemburg.

In the period Jan.–Sept. 1938 Russian exports to the United Kingdom were valued at £13,673,904, and imports from that country £12,857,657. £8,470,973 represented re-exports (chiefly of Empire origin). The figures for the corresponding period of 1937 were respectively £18,584,287 and £14,660,914. Principal exports from the United Kingdom to the U.S.S.R. were non-ferrous metals, machinery, and wool. Principal United Kingdom imports from the U.S.S.R. were gold, wood and timber, fur skins, and grain. Only sixteen per cent of imports into the United Kingdom, 4·7 per cent of exports from the United Kingdom, and 2·2 per cent of re-exports from the United Kingdom were carried in vessels of British nationality. Before the expiration on Sept. 30, 1937, of the £10 millions Anglo-Soviet financial credit-agreement of 1936, orders for a total of £10,089,652 were placed by the Soviet trading organizations in Great Britain. Over forty per cent of these were given for British machine tools. The greater part of the goods were manufactured in Yorkshire, Scotland, Lancashire, Warwickshire, London, and the Home Counties. Orders placed with 1,033 American firms by the Soviet Union in 1937 amounted to $75 millions.

Industrial output (Jan.–July 1938) was in heavy industry 16·6 per cent, in food industry 17·6 per cent, in light industry 7·5 per cent, and in local industry ten per cent higher than in the corresponding period of 1937. Output (Jan.–Oct. 1938, in thousand tons) was: coal 105,644·4, pig-iron 12,425·4, steel 15,315·4, rolled metal 11,182·7. Gold production (1937) was over £40 millions. In the oil industry (up to Sept. 1938) 661 idle wells were re-opened, and 655 new wells began to yield; production of crude oil: 99,192,000 barrels. Light industry output (Jan.–June 1938) was valued at 7,507·2 million roubles. In 1938, 110 new factories and mills and four new sugar refineries were opened (sugar output, 1937–38, 2,706,400 metric tons).

Transport, etc. On Jan. 1, 1938, there were 1,014 miles of

electrified railway lines The double tracking of the Trans-Siberian Railway between Lake Baikal and the Amur river was accomplished in Dec 1937 The Moscow–Kharkov motor-road (length 458 miles) was partly reconstructed in 1938.

The tonnage of the Soviet mercantile marine is about 1,300,000 , in 1937 about £1·5 million was paid to British shipowners for the chartering of British vessels. The Union fleet of ice-breakers numbers at present 28 boats. In 1938 two powerful new ice-breakers "Josef Stalin" and "Lazar Kaganovich" (each 10,000 h p and 11,000 tons) were launched. Twelve ice-breakers and half of the freighters of the Northern Sea Route Administration were marooned in the Arctic from autumn 1937 till the summer of 1938 on their way from Vladivostok to Murmansk. Planes of the Civil Air Fleet Administration and of the Northern Sea Route Administration flew, in 1937, 39,285,000 miles and carried 331,862 passengers, 9,406 tons of mail, and 38,049 tons of freight. The White Sea–Baltic Canal carried (1933–38) 138,982 passengers, and 6,293·5 thousand tons of goods. The Moscow–Volga Canal in its first navigation season (1937) carried 577,000 passengers and 480,660 tons of cargo. The construction of a new Canal joining the Kuban and Don rivers was started in April 1938.

In 1937 there were eighty broadcasting stations and 3,649 relay-stations ; 13,270 telegraph offices ; and 40,800 post offices. In 1938 telephone subscribers numbered 0·5 per cent of the population.

Finance and Banking. Budget Estimates for 1938 were : total revenue 97,878,963,000 roubles ; total expenditure 96,378,963,000 roubles, of which 27 milliard were for defence and 31·4 milliard for social and cultural measures. Taxation estimates for 1938 : turnover tax 83·3 milliard roubles ; profit tax 9·6 milliard roubles ; other direct taxes 3·1 milliard roubles. Receipts from state loans are estimated for 1938 at 5,670 million roubles. The total volume of transactions of the State Bank (1936) was 2,115,300 million roubles ; credit operations 284,000 million roubles. On Dec. 1, 1937, the average savings bank deposit was 307 roubles. The official value of the rouble is 10½*d*.

Cultural Life. In 1938 the total number of pupils in the elementary and secondary schools was 33 millions, and of university students 550,000. There were 3,500 technical colleges, with about 700,000 students ; 90 agricultural institutes, with 63,500 students, and 523 agricultural schools, with 136,000 pupils ; 56,000 libraries ; 700 theatres ; 30,000 cinemas ; and 229 state and collective farm theatres. In 1936, 43,348 books were published to a total of 571,100,000 copies, of which nearly 25 per cent were in languages other than Russian. About 2,000 various magazines and bulletins were printed in 1937.

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UZBEK S.S.R. About 3½ millions of the inhabitants of this Republic of the Soviet Union took part on June 24 in the elections to the Supreme Council of the Republic. The percentage of the electorate was here lower than in all other Union Republics. Of the 395 elected members, 91 were women. All members of the Council belong to the communist and non-party *bloc*, which alone was permitted. The first session of the Council took place from July 19–23 in Tashkent, and the activities of the Commissariats for education, trade, municipal economy, agriculture, and health, were openly criticized. The Chief of the new government is Abdudzhabar Abdurakhmanov. In May the shooting of further "Fascist terrorists" was announced.



P. Popper]

UZBEK PEASANT MUSICIANS

Area and Population. Area : 142,857 sq miles. Population (1933) : 5,418,000 (rural 4,117,000 ; urban 1,301,000), made up of Uzbeks 76 per cent, Russians 5·6 per cent, and some Kara-Kalpaks and Kazakhs. In 1937 the total number of workers and employees was 370,000, of whom 62,000 were in heavy industry. The chief languages are Uzbek, Russian, Kara-Kalpak, and Kazakh. Leading cities : the capital Tashkent (1936) 515,000 inhabitants, and Samarkand (1936) 130,000 inhabitants.

Economic Life. In 1937, 99·4 per cent of cultivated land was collectivized ; there were 163 machine and tractor stations, with 18,400 tractors and about 3,000 lorries. The yield of raw cotton was over 1½ million tons.

Industrial output (1936) : oil 302,300 tons ; electric power 231·6 million kwh.

Budget (1938) : 1,315 million roubles.

Cultural Life. Expenditure on education (1937) : 545 million roubles. In 1937 there were over 4,500 elementary and secondary schools with 872,045 pupils and 27,081 teachers ; 26 higher educational institutions ; 32 workers' faculties ; 58 technical colleges ; 37 theatres ; 564 cinemas ; 189 newspapers. The number of practising physicians in 1938 was 2,185. (S. YAK.)

V

VALDES, ARMANDO PALACIO, Spanish novelist, was born in Entralgo, Asturias, in 1853, and died in Madrid in Feb. 1938. He was a doctor-at-law, interested himself in political economy and literary criticism, and was war correspondent for *El Imparcial* during the World War. But his chief work was as a novelist whose books became widely known outside Spain. Among his most famous novels were *Marta y Maria*, 1883; *La Hermana de San Sulpicio*, 1889; *La Espuma*, 1890; *La Fe*, 1892; *El Maestrante*, 1893; *Los majos de Cádiz*, 1896; *La alegria del capitán Ribot*, 1899, *Los papeles del doctor Angélico*, 1911; *Maximina*; and *Aguas Fuertes*.

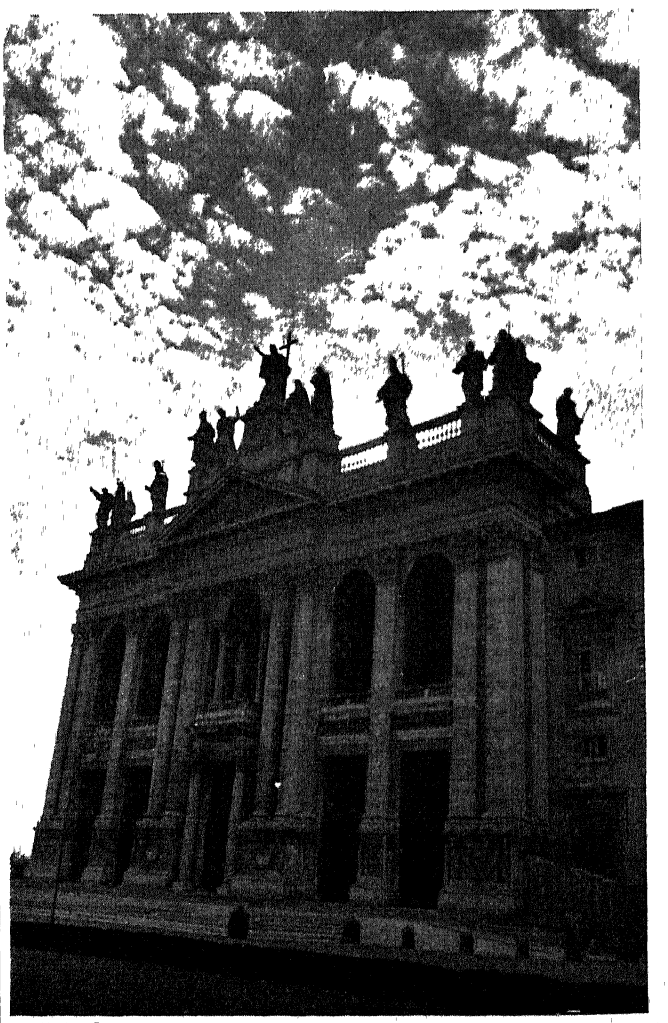
VANDERVELDE, EMILE, Belgium statesman, was born at Ixelles, near Brussels, on Jan. 25, 1866, and died in Brussels on Dec 27, 1938 An account of his career may be found in the *Ency. Brit*, vol. 22, p. 972. Vandervelde was minister without portfolio and vice-president in M. Van Zeeland's cabinet in 1935, and in 1936 became minister of public health in Van Zeeland's second cabinet, resigning in 1937, when there was talk of Belgium's breaking with Madrid after the murder of the Belgian diplomatist, de Borchgrave. Vandervelde's energies had recently been devoted at Socialist Congresses to opposition to the proposal for sending a Belgian delegate to General Franco's government in Spain. Among his later publications were: *Le Marxisme a-t-il fait faillite* (1928) (in collaboration with his wife), and *Le Pays d'Israel* (1929).

VATICAN. During 1938 the international tension was the subject of several Papal pronouncements, including an appeal for peace in September at the height of the Czech crisis, and several protests against the racial policy of the dictatorships and their treatment of minorities.

In January a convention was signed with Latvia, amplifying the 1922 Concordat, extending it to the new diocese of Leipaja, and providing for the eventual establishment of a Catholic faculty at Riga University. The attempt to secure ratification of the 1935 Concordat with Yugoslavia was finally abandoned in February, when the Belgrade government granted an amnesty to all persons condemned for offences committed during the anti-ratification struggle, and a formal protest against the failure to ratify was sent by the Pope to the Yugoslav authorities. On April 1 a note strongly censuring the action of the Austrian bishops, headed by Cardinal Innitzer, in blessing the activities of the German Nazis was published in the *Osservatore Romano* and was broadcast, though unofficially, from the Vatican. A few days later Cardinal Innitzer was received by the Pope, and on April 6 he published in Vienna an apologetic explanation of the Church's action in Austria, together with certain demands.

In May the Papal representative at Burgos was elevated to the rank of Nuncio, *de jure* recognition being thus given to Gen. Franco's government in Nationalist Spain. During Herr Hitler's visit to Rome in this month the Vatican Museum and galleries were closed by the Pope's order, and after their reopening German nationals wearing swastikas were refused admittance. The dispute between the Italian and Papal governments over the status of "Catholic Action" was temporarily settled in August by an agreement between the secretary of the Fascist party, Signor Starace, and Signor Vignoli, Director of Catholic Action, providing that the latter body should take no active part in politics, stating that it was no part of its programme to form professional syndicates, and that those already in existence would limit themselves to religious aims, and that "Action" youth associations would use no flag other than that of the nation, religious banners excepted.

Six Cardinals died during 1938. Cardinal Luigi Capotosti (Feb.), succeeded as Papal Datary by Cardinal Tedeschini; Cardinal Dalmazio Minoretti, Archbishop of Genoa (March), Cardinal Giulio Serafini, Prefect of the Congregation of the Council (July); Cardinals Hayes, Archbishop of New York, and Camillo Laurenti (both in September); and Cardinal Kakowski, Archbishop of Warsaw (Dec.). Three canonizations took place on Easter Sunday, the new Saints being the Polish 17th-century Jesuit martyr, Andrew Bobola; the 16th-century Spanish Franciscan, Salvator de Horta; and Giovanni Lionardi, an Italian of the sixteenth century. November saw the addition to the calendar, on three successive Sundays, of three new beatæ—Maria Guiseppa Rossello, foundress of the Daughters of Our Lady of Pity; the American Mother Francesca



P. Popper]

THE LATERAN, ROME

Cabrini, foundress of the Missionaries of the Sacred Heart; and Maria Domenica Mazzarello of Turin, associate of Don Bosco and foundress of the Daughters of Our Lady of Help of Christians. During the ceremonies in the Vatican at the second beatification the Papal throne was slightly damaged by an outbreak of fire.

A project for a new Papal broadcasting station was announced in March; and in June the Vatican Post Office began to accept letters for air-mail transmission, new stamps being issued whose designs included the dove of Noah carrying the olive branch, and the chariot of fire conveying Elijah to heaven.

In November the Holy See, for the first time since the eighteenth century, became officially represented in Great Britain, the Apostolic Delegate being Mgr William Godfrey, Rector of the English College in Rome. (*See* also PIUS XI; ROMAN CATHOLIC CHURCH.)

VAUGHAN WILLIAMS, RALPH, O.M. (1872–), musical composer, the son of a clergyman, is himself to-day the high-priest of English music. Educated at Charterhouse and Trinity College, Cambridge, he studied at the Royal College of Music, later in Berlin, and finally under Ravel in Paris, where the then prevailing interest among French composers in mediæval modes first gave him the idea, which hardened into a life-long conviction, that nationalism is the real basis of all great music. He accordingly steeped himself in English folk-songs, studied old English music and, eschewing in his own compositions all classical or international precedent, evolved an uncompromisingly English and strongly individual style of a "noble" and lofty character that is occasionally somewhat cramped by the narrow limits of this self-imposed provincialism. Nevertheless, some of his best works such as *The Lark Ascending,* the oratorio *Sancta Civitas,* the *Mass in G-Minor* and the *Symphony in F-Minor* (1937), are among the finest creative efforts of our time. Recent compositions include *Benedicite* (1931), *Dona Nobis Pacem,* chorus (1936), *Flourish for a Coronation* and a *Te Deum,* both written for the coronation of George VI (1937), and *Serenade to Music,* composed for Sir Henry Wood's jubilee concert (1938). He received the O.M. in 1935, and on June 15, 1938, was presented at the Hanseatic University, Hamburg, with the 10,000 marks Shakespeare Prize for 1937, being its first recipient. For further details of his early work and career *see* the *Ency. Brit.,* vol. 23, p. 15.

VEGETABLE OILS AND ANIMAL FATS. World cottonseed production in 1938–39 will be appreciably below the record total of 1937–38. The United States had record domestic supplies in 1938, but imports (reduced by two-thirds compared with 1937) were still substantial. Egyptian cottonseed shipments rose in 1938, but oil exports declined.

With a larger Argentine crop in prospect, world linseed production in 1938–39 will be above 1937–38. Compared with 1937, Argentine exports fell heavily in 1938. Indian exports, despite the large production in 1937–38, were not greatly increased in 1938. A larger area has been planted for 1938–39.

A record groundnut (peanut) crop was harvested in India in 1937–38. The area planted for 1938–39 is slightly less. The season's crop in French West Africa is reported to be somewhat larger than the previous year's. Indian shipments in 1938 increased, but British and French West African shipments were smaller.

Manchurian soya bean exports in 1938 were rather larger than in 1937. An increased production is reported for 1938.

Philippine copra exports were much increased in 1938, but shipments from the other chief exporters showed little change against 1937. Exports of coconut oil remained about the same.

Palm kernel shipments from Nigeria increased slightly in 1938, but the rise was offset by smaller exports from the French West African colonies. Nigerian exports of palm oil again declined, whilst those of the Netherlands East Indies and Malaya increased.

The Mediterranean olive crop in 1938 was poor.

With a weaker demand and larger domestic oilseed supplies, imports into the United States in 1938 were substantially below the high level of 1937. Imports of palm kernels and of palm and palm kernel oils were notably less. Owing to the fall in cottonseed output domestic oilseed supplies in 1939 will probably be smaller than in 1938, but groundnut and soya bean supplies are again large.

In Germany, supplies of vegetable oils increased in 1938 compared with 1937. Imports of copra, soya beans, and groundnut oil were much increased. Palm kernel imports fell again but, on balance, supplies were larger because of heavily reduced exports of palm kernel oil.

Available supplies of vegetable oils in the United Kingdom further increased in 1938. Imports of copra, groundnuts, and palm oil were substantially larger, but linseed oil imports declined. Increased groundnut oil exports more than offset the smaller exports of cottonseed and palm kernel oils.

France maintained its groundnut imports at a high level in 1938, judging by the first ten months' figures, but imports of linseed, copra, and coconut oil were considerably smaller than in 1937.

London oilseed prices moved downwards during 1938, though less severely than in 1937. The sharpest fall occurred in the early months: a short-lived mid-year recovery was followed by steadier prices. Cottonseed and soya beans rose towards the year-end, finishing higher than twelve months earlier.

Lard, tallow, and whale oil prices declined. In the United States lard production and exports increased. American and Australian tallow supplies increased, but Argentine shipments fell. The British government purchase of whale oil reduced the pressure of the large 1937–38 production. (J. L. C.)

VENEREAL DISEASES. There can be little doubt that the year 1938 will go down to history, so far as venereal disease is concerned, as the year in which the sulphonamide compounds came into general use in the treatment of *gonorrhœa.* Investigators from many parts of the world report cures obtained in a few days, and a vast literature is growing up around the subject. These compounds, under different names and in different countries, are accomplishing almost miraculous cures, but numerous workers have sounded a note of warning lest over-optimism lull both doctor and patient into a false sense of security, for it cannot be too strongly urged that cessation of symptoms does not necessarily mean eradication of the disease. Nevertheless, reports of numerous workers indicate that under suitable conditions a satisfactory result may be expected in over eighty per cent of cases. General agreement has not yet been reached on the details of treatment, but there is a consensus of opinion that these drugs act best in conjunction with natural, or artificially produced, antibody, when given in adequate, evenly spaced doses, and in an alkaline urine. It is suggested that their action is bacteriostatic and stimulating to the reticulo-endothelial

system. Too much stress cannot be laid on the necessity for a careful watch for relapse and the most rigorous tests of cure, in addition, toxic effects are common; most of these are mild and evanescent, but serious ones, such as agranulocytosis and paresis, may occur, and patients under the influence of these drugs should be kept under observation and not allowed to follow any occupation in which they might endanger the lives of others, *e g* engine or motor driving. For these and other reasons the authorities in Great Britain have put these compounds on the Poisons List (Schedule 4), and after Jan. 1, 1939, no one will be able to obtain them without a doctor's prescription.

The use of live vaccines in chronic gonorrhœa, especially when the cervix uteri is involved, has been recommended by Loeser (1938), and cure is said to be obtained in from 80 to 85 per cent of cases

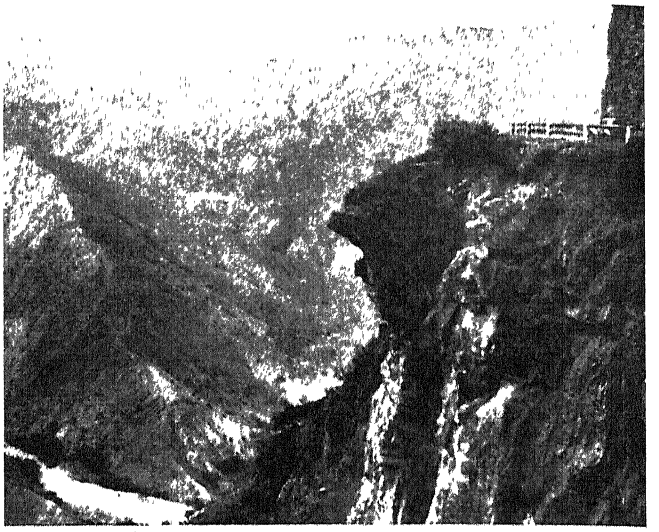
In *chancroid* or "soft sore", too, brilliant results have been obtained, Batchelor and Lees (1938) reporting ten cases all cured in a few days with an average total dosage of fifty grams of sulphanilamide MacCallum and Findlay (1938) found that a considerable percentage of mice infected intra-cerebrally with the virus of *Lymphogranuloma inguinale* were protected by treatment with sulphanilamide, and cure of this disease with the same drug has been reported, whilst some claim good results with prontosil. Recent reports from Germany, France, and the U.S.A. confirm these favourable impressions.

A modification of the *Wassermann reaction* elaborated by Mørch is described by Krag (1938), who claims that it is the equal of the Kahn test both in sensitivity and specificity. The *complement fixation test for gonorrhœa* on which reliance is placed by many leading venereologists in Great Britain, but which is accepted with considerable reserve in certain other countries, notably the U.S.A., is being investigated by a committee under the auspices of the London County Council, and the results will be awaited with interest.

In July 1937 a commission visited Denmark, Holland, Norway, and Sweden to study the anti-venereal measures employed in each of those countries and their effect on the incidence of venereal diseases. Their report is well worthy of study by those who are interested in the subject. Briefly, it was concluded that compulsory measures in Denmark and Sweden were beneficial, received the co-operation of the public, and did not lead to much concealment of disease nor impose undue hardship on the people. In all these four countries and in Great Britain anti-venereal measures have achieved considerable success in reducing the incidence of syphilis, but relatively very little in reducing that of gonorrhœa. When it is seen that the results in countries employing compulsory measures and in others which rely on voluntary methods are broadly similar, it does not appear that compulsory treatment is a major factor influencing the results of anti-venereal measures in those countries where it is employed. The best methods seem to be adequate facilities for free treatment for all, education of both the medical profession and the public, and the removal of the stigma attached to these diseases.

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VENEZUELA, a federal republic in Northern South America; language, Spanish; capital, Caracas; president, Eleazar López Contreras. Area 393,976 sq. miles; population (1937 census) 3,451,677. Chief cities: Caracas, 203,432; Maracaibo, 110,010; Barquisimeto, 50,774; Valencia, 49,963.



Sport & General]
VENEZUELA. THE ROAD (TOP RIGHT) BETWEEN LA GUAIRA AND CARACAS, THE CAPITAL, AT A HEIGHT OF 6,000 FEET

With increased government revenues President López Contreras was able to present to Congress, on May 7, 1938, a far-reaching "three-year plan" of: increased national production; lowering of the cost of living; and development of sanitation, education, and population, to be achieved through encouragement of domestic industry and cultivation of foodstuffs; a systematic immigration policy, and extensive public works, notably waterworks and sewers for the leading cities; highways, and port works; low-cost housing, and rural schools. The entire programme, estimated to cost 364,365,000 bolivares, was to be covered out of ordinary revenue and a 204,365,000 bolivares bond issue.

Venezuela's foreign relations in 1938 were marked by mediation efforts in the Nicaragua-Honduras boundary dispute, a non-aggression pact with Brazil, signed Dec. 8, continued negotiations for reciprocal trade with the United States, and active participation in the Pan-American Conference at Lima in December.

Education. Primary education is compulsory and under federal control. Considerable advances in education were made in 1938, particularly in organization of new facilities, with emphasis on technical education, especially in agriculture. Education received six per cent of the national expenditures.

Trade and Communication. In May, a direct Miami-Maracaibo air route was inaugurated, supplementing the already existing facilities. There are 683 miles of railways and a relatively good highway system.

Imports (textiles, foodstuffs, and manufactured goods) increased 39 per cent in 1937, with a total of 304,633,681 bolivares (52·7 per cent from the United States). Exports increased 13·4 per cent to 871,462,781 bolivares, of which 88·4 per cent was in petroleum products, with coffee, gold, and cacao also important. Over eighty per cent of the petroleum export is to Curacao.

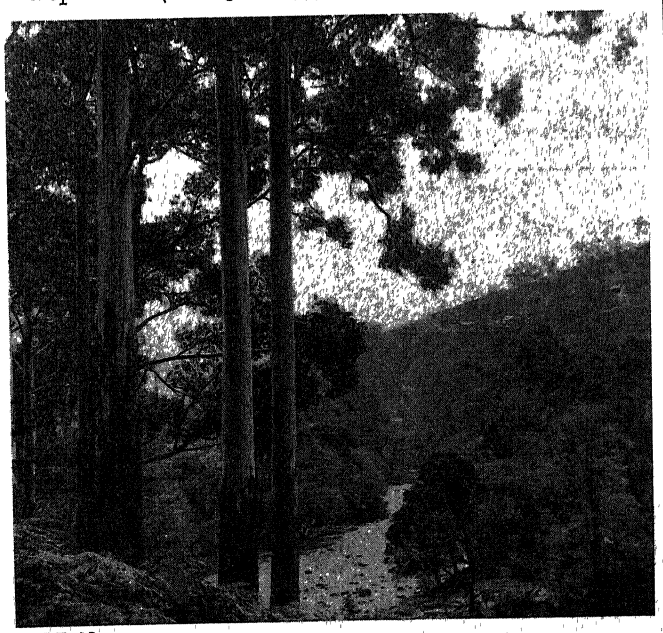
Production. Venezuela is the world's third largest petroleum producer with a 1937 output of 185,701,000 barrels, 9·1 per cent of the world's total, against a 1936 production of 154,794,000 barrels. Taxes derived from petroleum furnish nearly one-third of the national revenue. Preliminary reports for 1938 indicated that, despite a slight decline in production, petroleum exports were considerably

higher than in 1937. The chief agricultural product is coffee; but owing to the glutted world market, exports fell from an approximate 125,000,000 lb. in 1936 to 84,000,000 in 1937, of which only ten per cent was in the final three months. Cacao to the value of 13,996,753 bolivares (double that of 1936) was produced for export in 1937. The monetary unit is the bolivar (value: 1*s.* 4*d* approx). The national debt is *c.* 3,000,000 bolivares, probably the lowest per capita of any country in the world. (L. W. Be.)

VERNALIZATION: *see* Botany.

VICTORIA. In spite of drought in the northern and north-eastern pastoral districts, the output of wool in the 1937–38 season constituted a record. Later in the year, however, the state suffered from severe drought, which especially injured the wheat districts. Speaking in Nov. 1938, the premier, Mr. Dunstan, declared that the wheat harvest had completely failed in some districts. The outlook was more serious than it had been since 1914. The rains of the previous two months had fallen almost entirely outside the agricultural areas. Largely as a result of this misfortune, the estimated budgetary surplus for 1938–39 had to be converted into an estimated deficit of £825,000, which the government proposed to meet out of loan funds. The 1937–38 budget had yielded a small surplus, despite a deficit of £400,000 on the railways. In the urban areas, boom conditions were prolonged in 1938, a strong demand continuing for urban and suburban real estate. At the beginning of the year, the unemployed numbered only 20,000 in a population of two millions, and a shortage of skilled workers was reported. In state politics, a split occurred in the Country party in April over the question whether Mr. McEwen, a member of the party, should accept office in Mr. Lyons' federal ministry, the state premier and leader of the Country party being opposed to coalition governments. Mr. McEwen having been expelled by the state party, a new party was formed, under the title "Country-Liberal party", by those who objected to this decision. It was announced in November that Major-Gen. Sir Winston Dugan would succeed Lord Huntingfield as state governor in May 1939. (H. V. H.)

Area and Population:
Area 87,884 sq. miles.
Population (Dec. 31, 1937) 1,859,487.



A.N.T.A.]
IN THE RANGES NEAR MELBOURNE

Chief Towns (pop. Dec. 31, 1937): Melbourne (1,024,000), Ballarat (38,270), Bendigo (29,920), Geelong (39,900).
Governor. Lord Huntingfield, K.C.M.G.
Production 1936–37:

Wheat	42,844,816 bushels
Oats	6,107,885 ,,
Apples	2,873,327 ,,
Wool, total	163,048,510 lb.
Gold (1936)	117,596 fine oz
Coal, brown (1936)	3,044,897 tons

Industry and Labour 1936–37:
Factories, 9,165; employees, 191,383; gross value of output, £142,692,192.
Unemployment (trade union returns) average 1937–38 8·2 per cent
Communications:
Roads (March 31, 1937) 52,850 miles fit for motor traffic.
Railways (1936–37) government . . 4,721 miles
Finance 1937–38:
Revenue £27,617,000; Expenditure £27,587,000.
Debt outstanding (June 30, 1937) £176,597,010.
Miscellaneous:
Motor vehicles licensed (1936–37) cars, lorries, etc., 209,560; cycles, 26,663.
Wireless receiving-set licences (Dec 31, 1937) 306,620

VIENNA. On March 13 Herr Hitler entered Vienna and proclaimed the annexation of Austria to Germany. Vienna then passed entirely under Nazi control. The "Gauleiter" was Herr Clodilo Glorocnik, who organized no less than 2,370 "cells" to control the city. In the summer the area of Vienna was greatly enlarged, from 278 to 1,212 sq. km. (the largest area of any city in Germany), 97 villages being incorporated. Five new Bezirke were founded, and the boundary of others was altered. The revised population was 2,087,000. The Burgomaster, M. Neubacher, announced ambitious plans for the building of new satellite suburbs, a larger exhibition ground, and especially a great expansion of the port to coincide with the completion of the Main–Danube and Danube–Oder canals and of the arterial roads. Vienna was to become the jumping-off ground for Germany's trade in the Danube basin. The more immediate symptoms were, however, mass arrests, deportations, suicides, and pogroms; much disorganization, owing to numerous anti-Semitic measures, and a sharp decline in the non-German tourist traffic.

VIRGIN ISLANDS, a United States West Indian dependency east of Puerto Rico, comprising St. Croix, St. Thomas, St. John, and smaller islands; governor, Lawrence W. Cramer. Area 133 sq. m.; pop. (census, 1930), 22,012, largely negro and mixed. The principal cities are Charlotte Amalie, the capital (7,036), on St. Thomas, and Christiansted (3,767) and Frederiksted (2,698) on St. Croix. Universal suffrage became effective Jan. 1, 1938. Development in 1938 was marked by the continuation of the rehabilitation begun in 1934, with a general economic betterment indicated by increased shipping. During the year 70 miles of highway were improved. The islands depend primarily on sugar and rum, although economic diversification is being pushed, especially through the federally-controlled Virgin Islands Company. A tourist trade is growing rapidly. In the year ending June 30, 1937, imports were $3,819,618 and exports $1,040,687. The monetary unit is the United States dollar. The 1938–39 budget anticipated expenditures of $458,977, revenues $383,977, with a United States government contribution of $75,000 to cover the deficit, marking a $55,000 reduction in deficit in two years. Education was allotted $107,614. There are 26 public and private schools, with total enrolment (1938) of 3,901, 652 up in two years. Over 90 per cent of the population is literate. (L. W. Be.)

VITAL STATISTICS. With the growing interest in the population problem, it became apparent in some countries that the available statistics did not furnish the basic data indispensable for the framing of a population policy. Thus in England, where for a hundred years the annual reports of the Registrar-General have shown merely the number of registered births by sex and legitimacy, the Population (Statistics) Act, which came into force on July 1, 1938, provided for the ascertainment of the following additional facts: (*a*) the age of the mother, (*b*) the date of the marriage; (*c*) the number of children of the mother by her present husband and how many of them are living; (*d*) the number of children of the mother by any former husband and how many of them are living. The year 1938 also witnessed a further progress in the application of adequate methods to the measurement of fertility, mortality, and nuptiality. Thus the *Statistical Year-Book of the League of Nations*, which until 1936 contained merely crude birth-rates, and death-rates by age, after having started in 1936 with giving gross reproduction rates, began in 1938 to show net reproduction rates and also the mean expectation of life at various ages. Other publications of 1938 contained for the first time nuptiality tables.

Births. The crude birth-rate (rate of live-born per 1,000 inhabitants) in western and northern Europe dropped from 32 in 1841–85 to 24 in 1911–14 and to sixteen in 1932–33. Owing to the increase in the number of births in Germany it rose to seventeen in 1934–37. It was higher in Germany than in the rest of western and northern Europe from 1920 to 1929, lower from 1930 to 1933, and higher again from 1934 onwards.

The birth-rate has remained stationary in most countries where it has been low for some time. It declined particularly in those countries where it had been high. It fell in Bulgaria from forty in 1924 to 24 in 1937, and dropped during the same period in Poland from 35 to 25, and in Czechoslovakia from 26 to 17.

Until fifty years ago, the gross reproduction rate, which shows (on the basis of present fertility) the average number

Birth-rates, 1930–32, 1933–36, and 1937.

Country	1930–32	1933–36	1937
Austria	15·9	13·5	12·8
Belgium	18·3	15·8	15·1
Bulgaria	30·7	27·7	23·9
Czechoslovakia	21·7	18·3	17·2
Denmark	18·2	17·6	18·0
England and Wales	15·8	14·7	14·9
Scotland	19·1	17·8	17·6
Northern Ireland	20·4	19·6	19·8
Eire	19·5	19·5	19·2
Estonia	17·5	15·9	16·1
France	17·6	15·7	14·7
Germany	16·2	17·7	18·8
Greece	30·3	29·1	26·4
Holland	22·4	20·4	19·8
Hungary	24·2	21·3	20·2
Italy	25·1	23·3	22·9
Latvia	19·5	17·7	17·7
Lithuania	27·0	24·4	22·2
Norway	16·5	14·6	15·3
Poland	30·5	26·3	24·9
Portugal	30·5	28·9	27·0
Rumania	34·7	31·6	30·8
Sweden	14·9	13·8	14·3
Switzerland	16·9	16·0	15·0
Canada	23·1	20·3	19·8
United States	18·1	16·8	17·0
Australia	18·3	16·7	17·4
New Zealand [1]	18·1	16·5	17·3
Union of S. Africa [2]	25·3	23·8	25·1

[1] Excluding Maoris. [2] Whites.

Gross Reproduction Rates, 1933–36.

Country	1933	1934	1935	1936
Austria	0·80			0·77
Belgium		0·94		
Bulgaria		1·67		
Czechoslovakia	1·12 [1]	1·04		
Denmark	1·01	1·04	1·03	1·04
England and Wales	0·85	0·87	0·87	0·87
Scotland		1·10		
Estonia		0·90		0·94
France	1·03	1·05	1·00	
Germany	0·82	0·98	1·06	
Holland			1·26	1·26
Hungary	1·24		1·20	1·17
Italy		1·48 [2]		1·40
Latvia		1·01		
Lithuania	1·65			
Norway	0·90	0·88	0·87	0·88
Poland		1·48		
Sweden	0·82	0·82	0·81	
Switzerland			0·90	
Australia	1·05	1·03	1·05	
New Zealand [3]	1·05	1·03	1·01	1·04

[1] 1932–33. [2] 1932–35. [3] Excluding Maoris.

Mean Population, Births, and Birth-rates in Germany and in the rest of Western and Northern Europe, 1921-37.

Years	Germany			Rest of Western and Northern Europe		
	Mean Population	Births	Birth-rate	Mean Population	Births	Birth-rate
1921–25	62,276,000	1,377,785	22·1	118,727,000	2,417,831	20·4
1926–30	64,277,000	1,186,515	18·4	122,183,000	2,213,609	18·1
1931	65,429,000	1,047,775	16·0	124,225,000	2,148,133	17·3
1932	65,716,000	993,126	15·1	124,761,000	2,111,188	16·9
1933	66,027,000	971,174	14·7	125,257,000	2,002,322	16·0
1934	66,409,000	1,198,350	18·0	125,686,000	2,021,881	16·1
1935	66,871,000	1,263,976	18·9	126,073,000	1,976,902	15·7
1936	67,346,000	1,278,583	19·0	126,428,000	1,978,955	15·7
1937	67,829,000	1,275,212	18·8	126,803,000	1,968,487	15·5

of girls born to a woman who lives through the child-bearing age, exceeded two in every European country except France and Ireland. In 1937 it was below unity in England, Norway, Sweden, Belgium, France, Switzerland, Austria, Czechoslovakia, and Estonia.

Deaths. The crude death-rate (rate of deaths per 1,000 inhabitants) in western and northern Europe dropped from 23 in 1841–85 to seventeen in 1911–14. In 1923–37 it oscillated around thirteen. The change in the age composition of the population has prevented a further fall of the crude death-rate in spite of a reduction in mortality at various ages. For some countries, such as Australia and New Zealand, it even seems doubtful whether the crude death-rate will ever be again so low as it was some years ago (1932: Australia, 8·6; New Zealand, 8·0).

Death-rates 1931–35, 1936, and 1937.

Country	1931–35	1936	1937
Austria	13·5	13·2	13·4
Belgium	12·9	12·8	12·7
Bulgaria	15·5	14·2	13·4
Czechoslovakia	13·8	13·3	13·3
Denmark	10·9	11·0	10·8
England and Wales	12·0	12·1	12·4
Scotland	13·2	13·4	13·9
Northern Ireland	14·3	14·4	15·1
Eire	14·0	14·4	15·3
Estonia	14·9	15·6	14·7
Finland	13·4	13·8	13·0
France	15·7	15·3	15·0
Germany	11·2	11·8	11·7
Greece	16·5	15·2	15·2
Holland	8·9	8·7	8·8
Hungary	15·8	14·3	14·2
Italy	14·1	13·7	14·2
Latvia	13·9	14·1	14·3
Lithuania	14 6	13·3	13·1
Norway	10·4	10·4	10·4
Poland	14·6	14·2	14·0
Portugal	17·0	16·4	16·0
Rumania	20·6	19·8	19·3
Sweden	11·6	12·0	12·0
Switzerland	11·8	11·4	11·3
Canada	9·7	9·7	10·2
United States	10·9	11·5	11·2
Australia	9·0	9·4	9·4
New Zealand [1]	8·2	8·7	9·1
Union of S. Africa [2]	9·8	9·6	10·0

[1] Excluding Maoris. [2] Whites.

The net reproduction rate, which shows (on the basis of present fertility and mortality) the average number of future mothers born to a mother of to-day, exceeded unity, prior to the World War, in every European country except France. In 1937 it was below unity in all countries of western and northern Europe, with the exception of Holland and Eire; it was likewise below unity in Austria, Czechoslovakia, Hungary, Finland, Estonia, Latvia, the United States, Australia, and New Zealand. In Germany the net reproduction rate, which five years ago was lower than in any other country of western and northern Europe, is now about the same as in France.

Net Reproduction Rates, 1933–36.

Country	1933	1934	1935	1936
Austria	0·67	—	0·64	—
Belgium	—	0·80		—
Bulgaria		1·19		
Denmark	0·90	0·93	0 90	—
England and Wales	0·73		0·76	
Scotland	—	0·91	—	—
Estonia		0·73		—
France	0·88	0·90	0·87	—
Germany	0 70	0·82	0·88	0·89
Hungary		1·01 [1]		—
Italy	1·18	—	—	—
Latvia	—	—	0·86	
Norway	0·80	0·80	0·78	—
Poland	—	1 11	—	—
Portugal	1·29	—	—	—
Sweden	0·73	0·73	0·73	—
United States [2]	0·94	0 97	0·96	—
Australia	0·96 [3]		0·96	
New Zealand [4]	0·98	—	0·94	0·97

[1] 1932–35. [2] Whites. [3] 1932–34. [4] Excluding Maoris.

The following table shows the mean expectation of life (average number of years of life still remaining to a person of a given age) for all countries for which recent life tables are available. Wherever infant mortality is high, the mean expectation of life is considerably shorter for the newly-born than for those having survived the first year of life.

Expectation of Life at Various Ages (Years).

Country	Period	Males					Females				
		0	1	20	40	60	0	1	20	40	60
Austria	1930–33	54·47	60·55	45·18	28·65	14·15	58·53	63·46	48·03	31·13	15·42
Belgium	1934–35	58·82	63·35	47·47	30·60	15·52	62·79	66·23	50·20	33·11	17·12
Czechoslovakia	1929–32	51·92	59·90	45·29	28·96	14·35	55·18	61·96	47·40	30·98	15·35
Denmark	1931–35	62·0	66·5	49·8	32·1	16·0	63·8	67·1	50·0	32·5	16·4
England and Wales	1937	60·18	63·33	47·10	29·57	14·31	64·40	66·79	50·40	32·78	16·48
Scotland	1930–32	56·0	60·7	46·0	29·1	14·1	59·5	63·1	48·3	31·4	15·9
Estonia	1932–34	53·12	57·93	43·68	28·22	14·36	59·60	63·87	49·75	33·65	17·44
France	1928–33	54·30	58·63	43·30	27·62	13·76	59·02	62·53	47·40	31·37	15·94
Germany	1932–34	59·86	64·43	48·16	30·83	15·11	62·81	66·41	49·84	32·33	16·07
Italy	1930–32	53·76	59·71	46·75	30·39	15·16	56·0	61·32	48·49	32·14	16·13
Latvia	1934–36	55·39	60·10	45·58	29·30	14·73	60·93	64·79	50·25	33·87	17·73
Poland	1931–32	48·2	56·9	43·7	27·9	13·7	51·4	58·7	45·7	30·3	15·1
Sweden	1931–35	63·22	65·88	49·44	32·50	16·59	65·33	67·17	50·55	33·54	17·29
Switzerland	1929–32	59·25	61·75	45·36	28·58	13·91	63·05	64·93	48·46	31·42	15·45
U.S.A. Whites	1936	60·18	62·63	46·02	28·88	14·32	64·36	66·22	49·27	31·77	15·88
Australia	1932–34	63·48	65·49	48·81	31·11	15·57	67·14	68·67	51·67	34·04	17·74
New Zealand [1]	1935–36	66·17	67·53	50·38	32·49	16·46	68·89	69·91	52·36	34·40	17·95
India	1931	26·91	34·68	29·57	18·60	10·25	26·56	33·48	27·08	18·23	10·81

[1] Excluding Maoris.

Marriages. The number of marriages was larger in 1937 than in any other year since 1921 in England, Scotland, Holland, Norway, Sweden, Italy, Rumania, Canada, Australia, New Zealand, the Union of South Africa (Whites), and Argentina. For countries such as England this increase in the number of marriages is the more noteworthy as, owing to a high nuptiality in the immediately preceding years, the stock of marriageable people had already been depleted considerably before 1937. The frequency of marriages in England, then, increased much more than indicated by the number of marriages or the crude marriage rate (rate of marriages per 1,000 inhabitants). The gross nuptiality rate, which shows the proportion of girls who, according to the prevailing nuptiality, would get married if none of them died before having reached the age at which the oldest spinster gets married, amounted in 1931–36 to 0·838, 0·835, 0·847, 0·872, 0·883, and 0·894 respectively. This means that, according to the nuptiality prevailing in England in 1936, only 106 out of every 1,000 girls remain unmarried. As shown in the following table, one-half of the girls reaching the age of sixteen are married before the end of their 25th year, three-quarters before the end of their 29th year.

Gross Nuptiality Tables, England and Wales 1930–32 and 1936.

Years of age	Surviving as Spinsters		Years of age	Surviving as Spinsters	
	1930–32	1936		1930–32	1936
16	100,000	100,000	28	36,264	27,982
17	99,789	99,703	29	32,627	24,244
18	98,855	98,363	30	29,747	21,513
19	96,255	95,096	35	22,496	15,121
20	91,911	90,015	40	19,679	12,901
21	86,011	83,142	45	18,292	11,931
22	77,642	73,625	50	17,445	11,367
23	69,341	64,125	55	16,950	11,046
24	61,078	54,500	60	16,636	10,860
25	53,274	45,908	65	16,431	10,749
26	46,531	38,742	70	16,283	10,671
27	40,871	32,705	80	16,230	10,618

The mean age at marriage of spinsters, *i.e.* the mean expectation of single life at birth for those who eventually marry, decreased from 25·87 years in 1931 to 25·08 years in 1936. The additional marriages then were largely early marriages. (R. R. K.)

VITAMINS: *see* DIETETICS.

VOCATIONAL GUIDANCE. The recent publication by two American writers, Keller and Viteles, of a survey of vocational guidance throughout the world has provided psychologists, educationists, and employment officials with a detailed and well-documented account of the conceptions held by their colleagues in the vocational guidance field, of the procedures adopted by them, and of the organization of their professional activities. It is clear that interest in the psychological problems involved in vocational guidance is growing rapidly, and that the aims and methods adopted by vocational advisers in most civilized countries bear striking resemblances to one another. It is noteworthy, however, that in countries of political authoritarian tendencies the view that an individual's occupational efficiency is of considerably more importance than his occupational satisfaction is apparently widely maintained. Consequently, in some of these countries vocational selection is regarded as presenting a problem more vital than that presented by vocational guidance. In others, psychological work in both fields has suffered a set-back. The civil war in Spain has seriously retarded the progress of important researches and administrative changes which were being carried out in that country, and in the U.S.S.R., vocational psychologists are criticized in some quarters for perpetuating class differences by lending colour to the view that certain children are incapable of benefiting equally with others from the opportunities available to them in the Soviet Union. In the democratic countries, where less emphasis is placed on vocational selection than on vocational guidance, guidance is being increasingly regarded as a function of the school. This is particularly true of the U.S.A. and Great Britain. J. and S. Jewkes have recently reported on the imperfections of the present official British system, which allocates to the school only a minor part in the guidance process, and they have strongly advocated closer co-operation between the school and the employment office. Many British teachers in secondary and elementary schools have already received instruction from vocational psychologists on the staff of the National Institute of Industrial Psychology in procedures appropriate to their particular problems.

The limitations of the psychological tests at present available for vocational guidance purposes are gradually being recognized. Many of the opinions expressed in Bingham's comprehensive, lucid, and well-balanced study of the subject are undoubtedly representative of the views of psychologists throughout the world. Tests are generally regarded as being of considerable value in investigating fitness for occupations of a practical constructional type (*e.g.* engineering, architecture, surveying); of less value in investigating fitness for predominantly clerical occupations; and of less value still in investigating fitness for occupations (*e.g.* salesmanship) in which success often depends to a considerable extent on the possession of appropriate social characteristics. Further, increasing recognition is being given by psychologists to the importance of economic and sociological factors in vocational guidance. Kotschnig's notable work on the international problem of unemployment in the learned professions has drawn attention to the need for far-sighted planning in the whole occupational field.

See W. V. D. Bingham: *Aptitudes and Aptitude Testing*, New York, 1937; J. and S. Jewkes: *The Juvenile Labour Market*, London, 1938; F. J. Keller and M. S. Viteles: *Vocational Guidance Throughout the World*, London, 1937; W. M. Kotschnig: *Unemployment in the Learned Professions*, London, 1937. (C. S. M.; A. R.)

W

WAGES AND HOURS. Money wages in Great Britain rose fairly rapidly in 1937 and the early months of 1938, reaching in June 1938 an average level of 8 per cent above that of 1936, which was actually the same as the pre-depression level of 1929 From Jan. to Sept. 1938 the wage-changes reported to the Ministry of Labour had involved a net increase of £223,000 in weekly wages, involving nearly two and three-quarter million workers. This rate of increase was much slower than that of 1937, when over the corresponding nine months there was a net advance of about £528,000 a week, involving nearly 4,300,000 workers. In 1938, among the groups affected, the only important decreases were among coal-miners, but most of the changes were fairly small, only the building workers securing substantial advances. These conditions indicated some set-back after the rapid advances of production and prosperity in 1937. In terms of real wages the advance recorded in 1936 was much less than the figures of money wages would suggest. In 1936 real wages (*i.e.* money wages divided by the cost of living) were eleven per cent above the level of 1929. There was a slight fall to ten per cent above the 1929 level in 1937; but by June 1938 this loss had been more than recovered, and real wages averaged thirteen per cent above those of 1929. By Oct. 1938 the cost of living index stood at 155 (1914 = 100), as compared with 158 in Oct. 1937. For food only the corresponding indices were 139 and 143.

The index numbers of wages quoted in the preceding paragraph represent wage-rates, and not actual earnings, which are affected by the volume of employment. Unemployment, after a fall in 1937, rose again in 1938; and by November it had climbed to a total of about 1,800,000, involving a substantial increase in short-time working in certain trades, as well as complete unemployment, and thus affecting average earnings of the employed. But, even after allowance has been made for under-employment, the employed British workers, except in the depressed areas, were substantially better off in real wages in 1938 than in 1929.

This comparison, however, takes no account of increased expenses of living due to higher rents in new or decontrolled houses or higher transport costs on account of men's living farther from their work. These are undoubtedly important factors in the larger cities, and considerably reduce the real improvement in purchasing power.

Over the world as a whole, it is impossible as yet to make adequate estimates for 1938, and reliance must be placed mainly on the 1937 figures. In most countries, money wages seem, in 1937–38, to have moved only within fairly narrow limits, and there has been little change in average purchasing power, except as a consequence of fuller or less full employment. The biggest changes have occurred in France and the United States, and in the Soviet Union. In this last case, no measurement of real wages is possible, in the absence of adequate price data. In France, hourly rates of wages rose sharply from 1936 to 1937, in connexion with the general reduction of working hours; but there are no adequate figures to show the movement of daily or weekly earnings except in the mining industry, where daily earnings rose rapidly, and had reached by June 1938 an index of 166 (1929 = 100) and showed a rise in purchasing power of between twenty-five and thirty per cent. In industry, wage-rates in Paris showed a somewhat similar movement, but provincial rates rose a good deal less; while civil servants and other public employees did not receive advances nearly adequate to compensate them for the increased cost of living. In the United States, wages rose fairly rapidly in 1937, as long as the level of prosperity continued to improve Thereafter came, with the recession, a fall in wages in some occupations; but on balance there was little change in the nominal rates, so that real wages advanced with the fall in prices. There was, however, in the recession of 1937–38 a considerable decrease in the regularity of employment, so that weekly earnings fell off sharply, despite the maintenance of the nominal rates of payment. There was some recovery as industrial conditions again improved after the middle of 1938; and the coming into force of the new wage-legislation promised to raise average wages further by lifting up the minimum standards, especially in the Southern States.

In Germany, money wages remained unchanged according to the official returns, and there was some advance in earnings on account of extensive overtime. Money wages increased in Italy, with the restoration of certain cuts made in the depression; but the advance was more than counteracted by the rise in prices. In Japan, money earnings rose, chiefly because of overtime in the war industries; but standards of living fell off for workers who were not engaged in war production, and still more for peasants, who had to sell at low and purchase at rapidly rising prices. In the Scandinavian countries wages remained unchanged, small increases in 1937 being approximately offset by rising retail prices.

The first two tables on the next page present such figures of money and real wages as are readily accessible for the major countries. As there is no uniform method of compiling the statistics of either wages or costs of living, comparisons should be made with caution. Hourly and daily or weekly earnings may yield widely different measurements, as the figures for France and the United States show. Very broadly, hourly *earnings* are comparable with weekly *rates*, whereas figures of daily or weekly earnings reflect the state of employment even more than the levels of wages in relation to work actually done. Cost of living figures also differ widely, some being based only on food prices, whereas others take account of rent and such items as clothing and fuel. A revised cost-of-living index for Great Britain, on a more up-to-date basis than the index now in use, is at present in course of compilation.

Hours of labour in Great Britain have changed very little in recent years. The 48-hour week, fairly generally established in 1919, is still in force in the majority of factory industries: it is, for example, practically universal throughout the textile trades. The engineering and kindred trades work a 47-hour week, and the builders mostly 46½ hours in summer and 44 in winter. Miners work a daily shift of 7½ hours, *plus* one winding time, averaging

Money Wages—Index Numbers (1929 = 100)

	1932	1936	1937	1938
Great Britain (weekly rates)	96	100	104	108 (June)
France (daily rates)	104	114	—	—
France (hourly rates)	104*	116*	146*	—
Germany (hourly rates)	82	79	79	—
U.S.A. (hourly earnings)	84	104	117	122 (June)
U.S.A. (weekly earnings)	60	86	95	83 (June)
Japan (daily earnings)	85	88	93	100 (March)
Italy (hourly earnings)	91	90	101	103 (March)
Sweden (hourly earnings)	102	100	103	—
Denmark (hourly earnings)	102	103	105	108 (Jan.)
U.S.S.R. (daily wages)	159	301	331	—
U.S.S.R. (monthly wages)	150	293	315	—

* Men

Real Wages—Index Numbers (1929 = 100)

	1932	1936	1937	1938
Great Britain (weekly rates)	110	111	110	113 (June)
France (daily rates)	107	124	—	—
France (hourly rates)	108*	126*	134*	—
Germany (hourly rates)	94	100	105	—
U.S.A. (hourly earnings)	108	123	133	141 (June)
U.S.A. (weekly earnings)	77	101	107	96 (June)
Japan (daily earnings) 1932 = 100	100	92	93	96 (March)
Italy (hourly earnings)	110	109	111	105 (March)
Sweden (hourly earnings)	110	107	108	—
Denmark (hourly earnings)	114	103	102	102 (Jan.)

* Men

about half an hour. Transport workers, except dockers, mostly work 48 hours, and dockers 44 hours. The 47-hour week is usual in the public utility services, except public works construction, where hours range from 44 in winter to as much as 49½ in the summer months. Particular firms have introduced a shorter working week in many trades, especially where the three-shift system has been introduced; but trade union demands for a general reduction in hours have met with little success.

Abroad, the forty-hour week has been introduced and effectively maintained in New Zealand, where the Labour government secured in 1938 a second lease of power. In France, on the other hand, the working of the forty-hour system, generally introduced in 1936–37, has been accompanied by considerable difficulties, and since the fall of the Blum government repeated attempts to modify it have been made by the Radicals under pressure from the employers. In the armament industries overtime has been extensively worked; but in most other occupations, owing to the depression of trade, the real question has been one rather of wage-costs than of actual working hours. Early in 1938, M. Daladier introduced substantial modifications into the system; and in November M. Reynaud, as part of his general plan of economic and financial reorganization, announced his intention to restore a working week of five and a half days, at eight hours per day. It was, however, uncertain whether this would be accepted by the trade unions, which had hitherto stood firm for the retention of the forty-hour week; but the failure of the one-day general strike called in protest by the C.G.T. at the beginning of December enabled the employers to get their way. Actually, the average number of hours worked in French industry in June 1938 was only 39, despite the prevalence of overtime in the armament trades.

The remaining country in which the forty-hour week has been extensively applied is the United States, where, however, most transport workers continue to work a normal week of 44 or 48 hours. In consequence of the recession, the average of hours actually worked in American industry fell back from 30 in 1937 to 33 in June 1938; but there was an increase in the later months of 1938, as production revived after the serious recession. Most Australian industries work a 44-hour week, and so do some industries in Canada and South Africa. But in Canada there are big differences between provinces, as well as between industries; and in South Africa the 48-hour week is still extensively in operation.

Most other developed industrial countries work a 48-hour week. This remains general in the Scandinavian countries, and also in Holland, Belgium, and Switzerland, as well as in Germany, where overtime is very prevalent on account of the shortage of labour. In southern and eastern Europe there is more variation, few workers having a normal week

Actual Hours of Work in Industry, 1929–38

	1929	1932	1937	1938
Germany (per day)	7·67	6·91	7·68	7·65 (June)
U.S.A. (per week)	48·3	34·8	39·2	33·1 (June)
France (per week)	48*	44·6†	40·4	38·8 (June)
Italy (per month)	182	160	163	167 (March)
Sweden (per week)	—	43·5	47·1	—
Japan (per day)	9·27	9·10	9·32	9·37 (March)

* 1930 † 1934

Normal Hours of Work in Certain Industries, 1937–38

	Engineering.	Building.	Printing.	Transport.
Great Britain	47	44–46½	45	44–48
U.S.A.	—	39	39–40	44–48
France	40	40	40	40
Sweden	48	48	48	48
Australia	44	44	44	45½
Belgium	48	48	48	48
Denmark	48	48	48	48
Holland	48	48	48	48–57
Switzerland	48	48–50	48	48–51
New Zealand	40	40	41–42	40

of less than 48 hours, while a good many work for 50–55 hours. In the Far Eastern countries a much longer working week prevails. In Japan, for example, average working hours per day range from nine to nine and a half.

During 1937 and 1938, whereas working hours have remained practically unchanged, an extensive movement has developed for the concession of paid holidays. In a number of countries payment for holiday periods has recently been established as a statutory right; and in others the system has been considerably extended by collective agreement. In Great Britain, for example, the miners are among the groups which have recently secured recognition of the principle, though the allowances granted are still only on a modest scale. A committee of inquiry has recently reported in favour of the general extension of paid holidays in Great Britain, but has left the detailed application of the system to be worked out for the present by voluntary agreements in each industry.

The two aspects of the wage question which have recently attracted most attention in Great Britain are the

prevalence of malnutrition among the worse-paid workers, especially those with large families, and the problems arising out of the relation between wages and the benefits or allowances paid to the unemployed. The Means Test under the unemployment assistance scheme is worked in normal cases subject to a "wages-stop" designed to prevent the assistance given from exceeding the wages usually earned, but it has been found impossible, in a large number of cases, to reconcile the "wages-stop" with the obligation to ensure a satisfactory maintenance to the household. Similarly, the amounts payable in unemployment insurance benefit have been found in a substantial number of cases to exceed normal earnings These difficulties, and also the results of certain special inquiries into the conditions of employed and unemployed workers in the large cities, have drawn public attention to the prevalence of exceedingly low wages in a considerable number of occupations which are protected neither by minimum wage legislation nor by trade union bargaining There is a growing demand either for an extension of the Trade Board system to cover these occupations, which are largely in "services" rather than in factory trades, or for the enactment of general minimum wage legislation modelled on that of Australia. Apart from this, there is a widespread movement for a minimum wage system in the distributive trades, where the larger firms, having raised wages under trade union pressure, now favour legislation to enforce comparable conditions on their competitors. There has also, on account of the new evidence which has rapidly accumulated concerning the prevalence of malnutrition in the larger families, been a marked revival of the demand for a system of family allowances, either general or payable only after the first or second child.

The general effect of the new evidence is to emphasize the danger of reckoning the adequacy of wages in terms of general averages, and especially of averages based on wages paid under collective agreements or Trade Board awards. It has been clearly shown that a rise in the average ascertained in this way may leave a substantial section of the unorganized workers still in receipt of wages so low as to be incompatible with satisfactory standards of nutrition, and to present a difficult problem to those responsible for administering unemployment assistance. It is evidently undesirable that maintenance under the Means Test should be at a higher standard than the applicant can secure when he is in work. But it is widely recognized that the remedy must lie not in reducing the amount of unemployment assistance, but in raising the wages of the lowest-paid groups of workers.

From Oct. 24, 1938, according to the terms of the Labour Standards Act, employers in inter-State industry in the U.S.A. must pay their employees at least 25 cents an hour, with overtime at one-and-a-half times the normal rate for hours in excess of 44 per week. The minimum hourly wage and the maximum weekly hours are to be thirty cents and 42 hours respectively after one year, and eventually forty cents and forty hours. By this Act, 750,000 workers immediately receive increased wages, and 1,500,000 work fewer hours. (G. D. H. C.)

WAKE ISLAND, a possession of the United States of America, lies in mid-Pacific in lat. 19° 15′ N., long. 166° 38′ 15″ E. It is about 2,130 miles west of the Island of Hawaii and 1,290 miles north-east of the Island of Guam. It is a typical coral atoll of three small islets enclosing a shallow lagoon; total land area about 2,600 acres, much of which is from ten to fifteen ft. above sea-level.

It is under the control and jurisdiction of the Navy Department, which has granted Pan-American Airways of the United States permission to establish and maintain temporary facilities on the island in connexion with their commercial trans-Pacific flight operations.

WALES. The annual report of the Welsh Board of Health, whose new offices in Cathays Park, Cardiff, the first State administrative building to be erected in Wales, were opened on March 1, 1938, gives some interesting comparisons of vital statistics between 1901 and 1937; in the 36 years the birth-rate had declined from 31·3 to fifteen per thousand, the death-rate from 18·1 to 10·5, the infantile mortality rate from 161 to 63 per thousand live births, and the maternal mortality rate from 6·61 to 4·54 per thousand births

The National Union of Welsh Societies, meeting at the Eisteddfod in August, decided to open a national petition to the government praying for the repeal of the legislation, dating from the time of Henry VIII, which forbids the use of the Welsh tongue in the courts, and asking that it be given parity with English in all legal and administrative affairs in Wales and Monmouthshire. At the end of the year no decision had been arrived at in this matter; but it may be noted that at the 1931 census only three per cent of the population over three years old spoke Welsh only, and 31 per cent were bilingual. Later in the month Mr. Morgan Jones, Labour member for Caerphilly, who, at the end of June had headed a deputation to the prime minister asking for the establishment of a separate Welsh Office on the lines of the Scottish Office, received a refusal based on the grounds both of expense and of overlapping.

Area and Population:

Area (including Monmouthshire) 8,016 sq. miles.
Population (est. June 30, 1937) 2,479,100
Chief Towns (pop. est. June 30, 1938) Cardiff (221,500); Swansea (164,100); Newport (97,200).

Languages. English and Welsh (census 1931; bi-lingual 811,329; Welsh only 77,932).

Religion. Christian (Methodist, Congregationalist, Episcopalian, and Roman Catholic).

Production:

Area under corn and root crops (1937)	300,000 acres
Sheep, number (1938) . . .	4,348,000
Lambs ,, (,,) . . .	1,862,000
Coal output (1937)	38,245,000 tons
,, ,, (est. 1938) . . .	36,245,000 ,,



Fox Photos]
THE BUILDING FOR THE WELSH BOARD OF HEALTH IN CATHAYS PARK, CARDIFF, OPENED IN 1938

Pig Iron (1937)	824,600 tons
,, ,, (est. 1938) . . .	678,400 ,,
Steel Ingots and Castings (1937) .	2,632,800 ,,
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Communications, Overseas Trade, Finance, Education, etc. (*see* GREAT BRITAIN AND NORTHERN IRELAND).

WARBURG, OTTO, German botanist, born in Hamburg on July 20, 1859, died in Berlin on Jan. 10, 1938. His chief work as a botanist had to do with the subject of tropical plants, and he became professor at the Oriental Seminary, Berlin, in 1892. He became a leading Zionist, and from 1911 to 1920 was president of the World Zionist Movement. In 1921 he became director of the Agricultural Experimental Station in Jaffa, and in 1925 chief of the Institute of Natural History of Palestine in the University of Jerusalem.

WARSAW. A striking trend of present-day Poland is industrialization . the growth of the towns, and their being given a due place in national life. This is necessary in a land where even to-day two-thirds of the population lives from the land. In all this process Warsaw leads the way. A graphic illustration of its stages was given in the autumn by an exhibition, "The Warsaw of the Future", in the fine National Museum, which was visited and admired by tens of thousands. But something else has stirred the imagination of Warsaw even more. Two years of work have laid bare a good portion of the fourteenth-century walls and moat that surrounded the old city—something of which the common man had no notion. This can now be visited, and makes a powerful impression. The "reproach" of Warsaw that it was "modern" has now been removed.

One notable event of the early summer of 1938 was the bringing home from abroad of the remains of St. Andrew Boboli, who was martyred on the eastern borders in the seventeenth century. The remains now lie in a church in one of the suburbs, under the care of the Jesuit Fathers. (W. J. R.)

WARWICK, FRANCES COUNTESS OF, died at Easton Lodge, Dunmow, Essex, on July 26, 1938. Frances Evelyn Maynard was born on Dec. 10, 1861, a granddaughter and eventual heiress of the third and last Viscount Maynard. In 1881 she married Lord Brooke, who in 1893 succeeded his father as fifth Earl of Warwick and died in 1924. In 1895 she was converted to socialism, and in 1923 was defeated by Mr. Anthony Eden in a parliamentary by-election at Warwick and Leamington.

Lady Warwick founded a secondary and technical school in Dunmow for children in rural districts, a college at Studley Castle, Warwickshire, for training the daughters of professional men in agricultural pursuits, and a home at Warwick for crippled children. Her offer of Easton Lodge as an International Labour University could not be accepted by the Labour Party on account of expense of alterations. Lady Warwick published, among other books, *Warwick Castle and its Earls* (1903), *A Woman and the War* (1916), *Afterthought* (1931), and *The Prime Minister's Pyjamas* (1933).

WASHINGTON, District of Columbia, capital of the United States, has a population of 627,000 (1937 estimate). Activities of the National Capital Park and Planning Commission in 1938 included completion of development plans for one-third of the 23-mile scenic Fort Drive parkway to connect the sites (now parks) of sixteen Civil War forts which encircle the city on the surrounding hills. Early studies were renewed for the development of the eastern approaches to the Capitol. The 186-mile historic old C & O canal has been purchased as a Public Works project for recreational development, the lower section of which will be an important feature of the Memorial parkway. The long-advocated airport at Gravelly Point is also under construction with Public Works funds and will provide the national capital with the most modern air terminal facilities, within a ten-minute drive of the business district over the Mount Vernon Memorial highway. Thanks to the wisdom of L'Enfant in planning wide main thoroughfares, it has been possible to widen many of Washington's down-town streets to accommodate increasing traffic needs without acquiring additional property.

The National Gallery of Art, gift of the late Andrew J. Mellon, is rapidly taking shape in the Mall. Across Constitution avenue the Apex building now completes the eastern end of the Pennsylvania avenue triangle. North of the intersection of Constitution and Pennsylvania avenues the first unit of the Municipal Center Administration buildings is under construction, so placed as to preserve the view from Pennsylvania Avenue of the fine old Hadley Court House built in 1820.

The Alley Dwelling Authority completed several new slum reclamation projects during the year. In 1938 President Roosevelt approved a $6,600,000 loan from the U.S. Housing Authority to the Alley Dwelling Authority which, with $763,000 to be realized from the sale of debentures, is expected to construct some 1,200 new homes for about 5,000 persons with family incomes of not more than $1,100 a year. The annual subsidy which is to be granted by the U.S. Housing Authority will be pooled into a fund for the relief of families which actually need relief, instead of being spread over all the families occupying the homes. This will place the housing project itself on a sound, unsubsidized basis.

WATER POWER. The developed water power in the world at the end of 1938 was estimated at about 65,000,000 h.p. of installed water wheels. The potential water power of the world was estimated at about 670,000,000 h.p. on the basis of ordinary minimum flow and 100 per cent efficiency. However, the figures of developed and potential water power are not directly comparable, as the capacity of installed water wheels is two or three times the potential low-flow power at the developed sites.

Water-power plants and capacities in different countries are reported as completed in 1938 or under construction at the end of the year, as follows:

Argentina: On the Toro river at Campo Quijano, 450 h.p.; on Tercero river at Almafuerte, 18,000 h.p., date of completion not reported; on Arroyo Cebunco at Chos Malal, 87 h.p., date of completion not reported.

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Lower Falls, Ont., 10,000 h p ; on Mersey river at Cowie Falls, N S , 10,200 h.p ; on Winneway river, Que., 1,400 h p ; on Wahleach creek near Hope, B C., 1,300 h p. ; and on Carpenter creek near New Denver, B C., 129 h.p Extensions of existing plants : on Stave river at Ruskin, B C., 47,000 h p., on Winnipeg river at Stave Falls, Man , 12,500 h.p , making plant 50,000 h p ; on Sissiboo river at Sissiboo, N.S , 500 h.p. ; on Gatineau river at Chelsea, Que., 34,000 h.p., making capacity 170,000 h.p , and on Shawinigan river at La Gabelle, Que., 8,000 h.p. Plants under construction : On Paradise brook, N.S., 3,750 h.p ; on Duck river, Ont., 2,000 h.p. ; on St. Maurice river at La Tuque, Que., 243,000 h.p. ; on Charlot river at Wellington Lake, Sask., 6,600 h p., and an extension of plants on Churchill river at Island Falls, Sask., 19,000 h p , and on St Lawrence river at Beauharnois, Que , 53,000 h p.

Chile : On Copiapó river, Atacama, 1,600 h p.

Ecuador : On Ambi river at Caonton Ibarra, Imbabura, 450 h p., to be completed in 1939 ; on San Pedro river at La Estela, Pichincha, 5,000 h.p. total capacity, 2,500 h p. completed, to be completed in 1939 , on Bobo river at Tulcan, Carchi, 185 h.p. ; on Angel river at El Angel, Carchi, 50 h p.

Finland : Three plants, 11,000 h p. To be completed in 1939, three, 156,000 h.p. ; in 1940, one, 134,000 h.p

Germany : On Bober river at Deichow near mouth, 64,000 h.p., ultimate 96,000 h.p. Reports of any other plants could not be obtained for military reasons.

Great Britain : The second stage of the Lochaber Power Scheme was completed in Aug. 1938. There is a third stage yet to be carried through, which is to take in the head waters of the Spey. Present total installed capacity in Great Britain and Northern Ireland 400,000 h.p. (with a potential 700,000 h.p.).

Guatemala : On Michatoya river near Escuintla, 3,400 h.p.

Iceland : On Laxaa river at Laxaa, 2,000 h.p., to be completed in 1939 ; at Siglufjord, 4,000 h.p , to be completed in 1940.

Ireland : On Liffey river at Poulaphuca, 20 miles from Dublin, 45,000 h.p., to be completed in 1941.

Japan : Fourteen plants, 204,000 h.p. To be completed in 1939, 12 plants, 79,000 h.p. ; in 1940, eight plants, 120,000 h.p. Extensions to 41 plants, 372,000 h p. ; to be completed in 1939, eight plants, 109,000 h.p. ; two plants in 1940, 11,700 h.p.

Latvia : On Daugava river at Kegums, 94,000 h.p., to be 75 per cent completed at end of 1940.

Manchukuo : On the Yalu river between Korea and Manchukuo, construction started on large development, ultimate about 2,000 h.p.

Mexico : On Tilostoc river at Valle de Bravo, Mexico, initial 32,000 h.p., to be completed in 1939 ; on Xia river at Xia, Oaxaca, total 125 h.p., to be completed in 1939 ; on Azul river at Colotlipa, Guerrero, 600 h.p., to be completed in 1939.

Newfoundland : On Exploits river at Grand Falls, addition 29,000 h.p., making total about 60,000 h.p. Total for country, 250,000 h.p.

New Zealand : On Rakaia river at High Bank, 28,000 h.p. ; utilizing water diverted from Rangitata river to be completed in 1941. On Cobb river near Mount Cobb, 12,000 h.p., date of completion not reported ; on Waikaretaheke river near Waikaremoana, 54,000 h.p., to be completed in 1941. Extensions to plant on Waikato river at Arapuni, 56,000 h.p. ; on Waikaretaheke river at Waikaremoana, 26,800 h p , to be completed in 1939 ; on Waitaki river, near Kurow, 40,000 h p , to be completed in 1940.

Norway : Nine plants, 51,000 h.p To be completed in 1939, four, 5,650 h p ; two in 1940, 15,200 h.p. ; extensions at ten plants, 96,400 h p ; to be completed in 1939, six, 65,300 h p.

Peru . On Santa Eulalia river at Juan Carosio, 51,000 h p.; on Canete river at Lunahuaná, 150 h p , at Ayacucho, 150 h p , to be completed in 1939, on Huallaga river at Huanuco, 500 h p , to be completed in 1939

Poland · Water-power plants under construction : On San river at Selina-Zabrodzie, 40,000 h.p. , on Wilja river at Turniszko, 16,000 h p , to be completed in 1940 ; at San River at Myczkowce, 6,000 h p. ; on Dunajec river at Czchow, 13,400 h p., to be completed in 1940 , on Sola river at Porabka, 26,800 h p., to be completed in 1939 , on Dunajec river at Roznow, 67,000 h p., to be completed in 1940.

Sweden . Three plants, 66,600 h p To be completed in 1939, two, 52,000 h p. ; in 1940 and after, four, 261,000 h.p. Extensions to eight plants, 105,500 h p ; to be completed in 1939, two, 5,800 h p. , in 1940, one, 14,500 h p. ; in 1941, one, 15,400 h p Present total installed capacity in country, about 2,150,000 h.p.

Switzerland : On Rhine river near Basel, 47,300 h p. ; on Rhône river near Geneva, 93,000 h p., each to be completed in 1940.

Union of Soviet Socialist Republics : A programme of construction of twenty water-power plants, total capacity 1,900,000 h.p., was announced in 1935 for completion in 1940. No definite information is available as to the progress made on this programme. Three additional plants, 1,270,000 h.p., are reported under construction. The Dnieper plant was scheduled to be increased to 750,000 h.p. by the addition of 170,000 h.p. during 1938.

United States : The increase, 439,000 h.p., in completed water-power plants is divided between new plants, 208,000 h.p., and additional units, 231,000 h p. The larger new plants are on Tennessee river at Pickwick Landing, Tenn., 96,000 h.p. ; on Flathead river at Kerr, Mont , 80,000 h.p. ; on Saco river, at Cataract, Me., 9,000 h.p. ; on Dan river at Townes, Va., 10,000 h.p. ; and smaller plants, one in New York, 2,500 h.p. ; one in Vermont, 4,000 h.p. ; and two in Wisconsin, 6,900 h.p. New units were installed on Colorado river at Boulder dam, Ariz., 230,000 h.p., bringing capacity to 745,000 h.p., and at a rebuilt plant in West Virginia, 1,000 h.p. The following plants were under construction : Big Thompson development, Colorado, involving the construction of a thirteen mile tunnel to divert water through the Continental Divide primarily for irrigation with ultimate water-power installations of 190,000 h.p. at six plants ; on Brazos river, Texas, 40,000 h.p. ; on Tennessee river at Gilbertsville, Ky., 177,000 h.p. ; on Kennebec river at Solon, Me., 10,000 h.p., on Penobscot river at Mattaseunk, Me., 12,500 h.p. ; other plants in Maine, 5,600 h.p. ; Santee-Cooper development, South Carolina, 213,500 h.p. ; on Neosho river at Pensacola, Okla., 80,000 h.p. The additional ultimate capacity of all water-power plants under way at the end of 1938 was about 6,700,000 h.p. The total capacity of water-power plants of 100 h.p. or more in the United States at the end of 1938 was about 17,700,000 h.p.

Uruguay : On Rio Negro at Rincon del Bonete, 160,000 h.p., to be completed in 1942.

The following countries are reported to have had no water-power developments during 1938 : Belgium, British Honduras, Costa Rica, Denmark, Dominican Republic, Greece,

Haiti, Honduras, Hungary, Netherlands Indies, Rumania, the Netherlands, Tunisia. No information could be obtained from Italy for military reasons.

WATER SUPPLIES. In England 1938 will always be regarded as a momentous year for water engineers, in view of the interest aroused by the serious epidemic of typhoid fever at Croydon at the end of 1937. Of the 340 cases affected, 43 proved fatal. The Minister of Health appointed Mr. Harold Lawson Murphy K.C., to hold a local inquiry into the causes leading up to the outbreak, and the steps taken to deal with it. The investigation indicated that the immediate cause was due to a chalk well, in which men were working, becoming infected by the typhoid bacillus from one of the men, discovered to be an active carrier of typhoid. During large parts of the period when work was in progress, untreated water was pumped into supply.

The issue of the report came as a sharp reminder of the need for vigilance by local authorities, and impelled the Minister of Health to impress upon those concerned the gravity of their responsibility, and to direct attention to the risks involved where supplies are drawn from wells or boreholes near the outcrop of chalk or limestone formations.

As a result, at several of the undertakings in Great Britain, where pure but untreated waters were being supplied, chlorination has been or is being introduced, as a safeguard against contamination. The Ministry of Health further advised that where chlorination is practised the dosage should be automatically and continuously recorded, and suitable instruments have been designed accordingly.

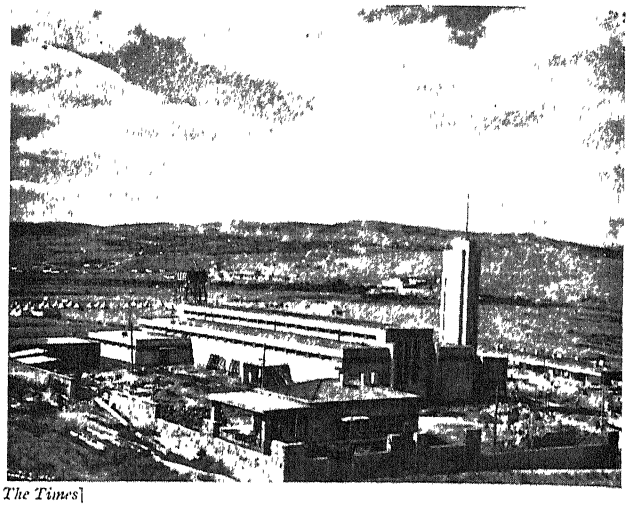
The consumption of water per head of population continues to increase, and many authorities in Great Britain have augmented their resources by the construction of new works. In rural areas several large new schemes brought into operation include Boston (Lincs), Dumfries, and Dunmow, where many hundreds of miles of pipe lines now provide a piped supply throughout remote villages, over an area of nearly 700 sq. miles.

New works under construction for the Metropolitan Water Board comprise three storage reservoirs of a total capacity of 11,600 million gallons. One of these, in the Lea Valley, will shortly be completed; the other two are being built at Staines and Walton. The estimated cost is over £2,400,000.

The Haweswater dam, for Manchester Corporation, is nearing completion, and substantial progress has been made on the Ladybower reservoir for the Derwent Valley Water Board. The former represents a novel design in masonry dams in Great Britain, and consists of a number of buttresses, 120 ft. in height, having a total length of 1,550 ft. At Ladybower, the earth dam will be the largest in that country; the cut-off trench below ground has an average depth of 180 ft. and a maximum of 240 feet. When completed, the height above ground will be 154 ft.

A new type of water-softening plant was recently completed for the Chesterfield and Bolsover Water Board, known as the hydrogen sodium base exchange process, having a capacity of 1,000,000 gallons per day, and designed to reduce the total hardness of the water from 28 degrees to six degrees. The West Cheshire Water Board also put into operation the first fully automatic zeolite softening plant to be installed in Europe by a public water undertaking.

The outstanding water supply scheme in the United States is the Colorado river aqueduct, costing over $200 millions, which is rapidly nearing completion. Designed to deal with a supply of nearly 1,000,000,000 gallons a day,



The Times]
WATER SUPPLY DEVELOPMENT IN TURKEY. THE NEW STATION FOR THE FILTRATION OF DRINKING WATER FOR ANKARA

it extends over a length of 392 miles across deserts and through rugged mountains, from the Parker dam on the Colorado river, to the coastal plain of Southern California. The water will be pumped in five stages to a total height of 1,616 ft. by large pumps of unprecedented efficiency.

In South Africa, after many years' consideration, construction will shortly commence on the Umgani River Scheme for Durban, at a cost of £1,750,000. The main works will comprise a 5,000,000,000-gallon reservoir, and an aqueduct over 31 miles long, designed to deal with 20,000,000 gallons per day.

Water Supplies and A.R.P. This subject received considerable attention during 1938; nevertheless experts, both in England and France, agree that waterworks are the least vulnerable of the public services. Although open storage reservoirs cannot be effectively hidden, earth or masonry dams in upland districts are considered difficult to attack, and complete destruction is unlikely. Pumping stations, however, often near dangerous areas, may be irreparably damaged, and in such cases it is necessary to provide, in addition to the ordinary methods of protecting buildings, adequate interconnexion between stations and reservoirs by the construction of by-passes, and the installation of alternative plant at a safe distance. As regards the distribution system, no protection can be afforded to underground pipes; all that can be done is to minimize dislocation of supply by ring mains, additional valves, and by organizing an efficient repair service. Where possible, connexions with systems in adjoining districts are being carried out. The possibility of pollution of reservoirs by poison gas and bacteria as a result of hostile air attack is not thought to be likely or practical; nevertheless, the testing of all supplies is considered to be a necessary precaution during and after an air attack. (J. K.)

WAZIRISTAN, on the north-west frontier of India, continued in a state of much unsettlement during 1938. The faqir of Ipi was still the centre of unrest, moving about the country intriguing and agitating. Sniping and kidnapping were incessant; and the tribesmen were introduced to a new type of hostility, in the form of picric-acid crystals for contaminating the water supplies for the British troops. An attack by Mahsuds in South Waziristan had been repulsed earlier in the year; but in July military operations on a considerable scale had to be undertaken. In retaliation the town of Bannu was raided, and fighting went on through the autumn, but by December most of the hostile

elements among the tribes had been brought to account. Among them was a so-called Syrian *pir* or holy man, who had been egging on the tribes to an attack upon Afghanistan. He ultimately surrendered to the British authorities and was deported, it turned out that he was an Arab preacher from Damascus, with a German wife The total cost of the military operations up to last September was £1¾ millions. (ME)

WEATHER: *see* METEOROLOGY.

WEIZMANN, CHAIM, D.Sc. (1874–), Jewish statesman and scientist, was born in Grodno province, Russia, studied chemistry in Germany and Switzerland, and is a naturalized British subject. He early became an active member of the Zionist movement (as such meeting the young revolutionary, Lenin), and after lecturing in Geneva went to Manchester university (1903) as reader in biochemistry. English Zionists not approving of his hostility to the Uganda colonization scheme, he for some years held aloof from Jewish politics, became one of the most brilliant chemists in England, and during the World War rendered services of vital importance as director of the Admiralty laboratories. In 1917 the Balfour Declaration granted his life-long ambition, the establishment of a national home for the Jews in Palestine, he headed a mission to that country, helped to found the new State, and with Col. T E Lawrence negotiated a treaty of friendship with the Arabs. He was president of the world Zionist organization from 1921 to 1931, when he was elected president of the English federation. He has been president of the Hebrew university in Jerusalem since 1932; in 1933 he was appointed head of the German refugee department of the Jewish Agency, and in 1935 (for the second time) president of the Jewish Agency in Palestine, a position he still holds.

During 1938 Dr. Weizmann interested himself in the problems due to anti-semitism in various European countries, and in November accompanied the Jewish delegation to the British premier in connexion with the drastic German repression In December he visited Palestine and Turkey, being received by the Secretary for the Colonies on his return, and in Feb. 1939 headed the Jewish delegation to the Palestine conference with the British government in London.

Dr. Weizmann married Vera Chatzman in 1906; there are two sons.

WELFARE WORK. Perhaps the most obvious fact in relation to industrial welfare work in Great Britain is the gradual change that has come over its legal standing in the years since it first came into official being at the Ministry of Munitions in 1916 Even ten years ago welfare work could be correctly defined as "anything for the comfort and improvement, intellectual or social, of the employees, over and above wages paid, which is not a necessity of the industry, nor required by law"; to-day, and more especially since the passing of the Factory Act, 1937 (see *Ency. Brit. Book of the Year*, 1938, p. 372), we have to end this definition at the word "paid"; for it is now universally recognized even by the small-factory managers, that welfare supervisors, works' medical services, canteens, sports grounds, clubs, and many other social amenities are actual necessities of industry, while the provision of many of these things, including, in certain branches, holidays with pay (*see* LEGISLATION, INDUSTRIAL), has become obligatory by law. That this is so in Great Britain, and to an increasing extent in other countries, is largely due to the work of the Industrial Welfare Society; for the Factory Act could not have given industry a code far in advance of anything thought possible twenty years ago, had it not been for the voluntary preparing of the ground and of public opinion by this and similar organizations.

During 1938 the outstanding feature was the increased attention given in all branches of industry to the environmental conditions of work · and many firms have gone beyond the statutory requirements of the Factory Act in such matters as cleanliness, ventilation, lighting and heating, and the provision of seats, factory buildings have been made more cheerful, music has been more widely introduced, and in some cases—especially in those in which the transference of an old and dingy workshop from a crowded centre to new premises in well-planned grounds has contributed to better health and improved methods of production—hours have been shortened or the five-day week introduced A large increase in the number of industrial pension schemes and holiday saving funds; an extraordinary growth in the consumption of milk by workers in the heavy industries; the wider use of the standard sickness record form of the Industrial Health Research Board, and much valuable work in the rehabilitation of persons injured in accidents; greater attendance of foremen and others at educational lectures, and the gradual spread of educational films; and a very great extension of voluntary holidays with pay can also be added to the achievements of 1938.

The most ambitious welfare scheme operated in Great Britain is the Miners' Welfare Fund, which directly affects the welfare of more than 3 million workers in coal-mining communities; it derives its revenue from a levy of a half-penny (formerly a penny) a ton on all coal raised, and is administered by a committee representing both owners and men, with an independent chairman. At the end of Nov. 1938 the total credits placed to the Fund amounted to more than £17,493,000; and allocations totalled over £16,276,000, the principal headings being: recreation, £5,600,000; pit welfare, including the provision of pithead baths, £3,500,000; health, £3,650,000; education, £1,156,000; and research, £1,024,000. *See* also SOCIAL SERVICES. (L. H. D.)

WESTERN AUSTRALIA. The gold industry in the state continued to enjoy a boom, the total output in 1937 being over a million ounces, and its value (£8,743,755) having been exceeded only once in the history of the West Australian goldfields, in 1903. Rural conditions were also satisfactory, although rainfall was below average in many places. The 1937–38 wheat harvest, totalling 35,868,000 bushels, showed an increase of 14,319,000 bushels on 1936–37, and another good harvest was expected in 1938–39 The budget produced a deficit of little more than £10,000, the deficit in 1936–37 having been £371,205. Among important public works in hand, progress was made with the Canning dam, which would have a storage capacity of 20,500 million gallons. A new bridge over the Canning river was completed, and work advanced on a new bridge over the Swan river near Fremantle to cope with the ever-increasing traffic between the port and the capital. A metropolitan building boom was further prolonged. The following were among the topics receiving the attention of the state parliament in its 1938 session: state insurance, public health, industrial arbitration, fair rents, the marketing of onions, and superannuation for government employees. (H. V. H.)

Area and Population:

Area 975,920 sq. miles.
Population (est. Dec. 31, 1937) 458,453.
Chief Town (pop. Dec. 31, 1937) Perth (215,700).



Director of Australian Trade Publicity]
ALBANY, WESTERN AUSTRALIA

Lieut.-Governor. Sir James Mitchell, K.C.M.G.
Production 1937–38 :

Wheat	36,091,000 bushels
Oats	4,364,160 ,,
Wool clip (1937)	64,739,400 lb.
Gold (,,)	1,000,647 fine oz.

Industry and Labour :
Total Value of Industrial Output 1936–37 £18,313,122.
Unemployment (Trade Union returns) average 1937–38 5·4 per cent.
Communications :
Roads (March 30, 1937) 32,570 miles fit for motor traffic.
Railways (1936–37) : Government . . 4,357 miles
Finance 1937–38 :
Revenue £10,819,042 ; Expenditure £10,829,735.
Debt outstanding (June 30, 1938) . . £93,711,941.
Miscellaneous :
Motor vehicles licensed (June 30, 1938) : cars, 17,640 ; lorries, vans, buses, etc., 5,950 ; cycles, 3,982.
Wireless receiving-set licences (Dec. 31, 1937) 66,269.

WESTERN INDIA STATES. This is a scattered group of small principalities in the Kathiawar country, N. of Bombay. Their total area is 41,277 sq. miles, and their population nearly 4¼ millions. They largely border on the sea or the salt-bearing Ran of Cutch, and include the ancient and beautiful town of Junagadh, the historic temple of Somnath, the Girnar mountain with its famous Jain temples, as well as a number of small but busy ports. Inland are the states of Idar and Gondal. The Gir forest shelters the only lions left in India. (ME.)

WEST INDIES. The name given to a chain of islands stretching from the south-east of Florida (United States of America) to the coast of Venezuela in South America. There are three main groups, the Bahamas, the Greater Antilles and the Lesser Antilles, divided politically into the three independent countries of Cuba, the Dominican Republic, and Haiti ; and British, French, Netherlands, and United States colonies. In the following tables, populations are estimated at Dec. 31, 1936.

Independent Countries :
Cuba : Area 41,634 sq. m. ; Population 4,370,000
Dominican Republic : Area 19,325 sq. m. ; Population 1,520,000
Haiti : Area 10,204 sq. m. ; Population 2,600,000
British Possessions :
Bahamas : Area 4,375 sq. m. ; Population 66,000
Barbados : Area 166 sq. m. ; Population 188,000
Jamaica and Dependencies : Area 4,710 sq. m. ; Population 1,151,000
Leeward Is. : Area 725 sq. m. ; Population 140,000
Trinidad and Tobago . Area 1,980 sq. m. , Population 448,000
Windward Is : Area 521 sq. m. ; Population 210,000
French Possessions :
Guadeloupe : Area 690 sq. m. ; Population 305,000
Martinique . Area 386 sq. m. ; Population 250,000
Netherlands Possession :
Curaçao · Area 386 sq. m. ; Population 91,000
United States Possessions :
Puerto Rico Area 3,435 sq. m. ; Population 1,760,000
Virgin Islands Area 133 sq. m. ; Population 22,000
(*See* also each of the above individual headings.)

WHALING : *see* FISHERIES.

WHEAT. The land devoted to wheat cultivation in 1938, as computed in countries furnishing regular and systematic returns, was 277 million acres. No higher figure has been returned in any previous year. The corresponding computation for 1937 was 261½ million acres, and the mean of the past five years 240½ million acres. The 1938 acreage figures for Russia and China are not available, and consequently no attempt has been made to bring these countries within the ambit of the world totals. Normally, Russia cultivates approximately 100 million acres of wheatland, and China 50 million acres.

A statistical segregation of world acreage figures (excluding Russia and China) in wheat exporting and importing countries, is given below :

(Items in thousands of acres)

	1938	1937	1936	1935
Exporting countries :				
N. Hemisphere .	166,760	157,870	142,300	144,385
S. Hemisphere .	36,250	32,010	30,940	27,120
Importing countries .	73,060	71,820	73,227	72,735
Total . .	276,070	261,700	246,467	244,240

Expansion of wheat acreage in exporting countries is most impressive. The explanation is that wheat growers in these countries have been subsidized by their respective governments, and have been concerned to devote more land and energy to wheat growing than to secondary and less profitable cereals. In Europe, wheat acreage is increasing slowly. Augmentation of sowings in Germany, Italy, and France appears to have halted, although totalitarian countries are still aiming for a heavier output per acre. A relatively larger wheat acreage was reported in the smaller countries of Europe, notably Denmark, Greece, and Belgium, also in the United Kingdom. The motive for increased production in the United Kingdom is, of course, the benefits accruing to farmers under the Wheat Act, 1932, which guarantees a price of 45*s.* per 504 lb. in respect of a maximum of 8 million quarters. Since 1932, the wheat area in England and Wales has increased from 1,288,000 acres to a 1938 figure of 1,830,000 acres.

Production. Wheat crops in the northern hemisphere, harvested mainly in Aug. and Sept. 1938, enjoyed a satisfactory growing season, and large yields were reported in a number of countries, notably Germany, France, Rumania, and Scandinavia. Outstanding harvests were also obtained in the United Kingdom, Canada, and the United States. Italy's crop, although adversely influenced by summer drought in northern provinces, was eventually estimated at the large figure of 37,160,000 quarters, compared with 37,000,000 in the previous year. Careful seed selection and a liberal use of fertilizers contributed to the recovery of the Italian crop, and also to the success of

harvests in other parts of Europe. On the North American continent, Canada obtained the largest crop—348 million bushels—for six years, thus ending a drought cycle dating from 1932. It may be mentioned that in 1937, the last of the drought years, the Dominion harvested only 182 million bushels of wheat, compared with a 1928 record of 567 million In the United States, a harvest of 850 million bushels was obtained in 1938, thus assuring the country an exportable surplus for the second year in succession, previously the United States had gathered four small crops in succession, and during this period domestic requirements for milling and for seed could be satisfied only by drawing on reserves, and importing wheat from Canada.

World Wheat Crops *

(In millions of quarters of 480 lb.)

	1938	1937	1936	1935	1934	1933
Exporting countries						
N Hemisphere	303·9	262·3	233 6	231·2	214·1	220·1
S. Hemisphere	57·0	47·5	54·8	41·6	52·0	63 7
Importing countries .	185·7	165·8	150·4	170·5	170 0	191 0
Total .	546·6	475 6	438·8	443·3	436·1	474·8

* Excluding Russia and China.

The 1938 world crop of 547 million quarters was a record, and gave birth to an unwieldy accumulation of supplies in the excess-producing nations. The following statement shows the world distribution of wheat since 1932–33 :

World Wheat Distribution

(Millions of quarters)

Season Aug. 1 to July 31	Carry over on Aug. 1	Crop	Total Supplies	Disappearance	Excess of Supplies
1938–39	88	547	635	*488	*147
1937–38	71	476	547	459	88
1936–37	97	439	536	465	71
1935–36	118	443	561	464	97
1934–35	149	436	585	467	118
1933–34	140	474	614	465	149
1932–33	128	479	607	467	140

* Estimates only.

The increased consumption foreshadowed for the present crop year hinges on the expectation that, because of low prices, an unusual quantity of wheat will be fed to animals in place of relatively dear maize.

World Trade. In comparison with the volume of wheat produced, international trade in wheat during 1938 was small. Restrictions, imposed for political reasons, on the importation of wheat into Europe are being tightened rather than relaxed with the passage of years. Except in the United Kingdom, millers are called upon to grind the maximum quantity of native wheat consistent with the volume of home production. Nevertheless, the disturbed political situation has actually helped trade this year, in the sense that importing countries have enlarged their oversea purchases to build up reserve supplies of wheat and other essential commodities. In the British House of Commons, on April 26, the Minister for Co-ordination of Defence, Sir Thomas Inskip, announced that the British government had purchased a quantity of wheat sufficient for the needs of the country during the early months of an emergency.

World Wheat and Flour Trade

Net Exports

(Quarters 480 lb.)

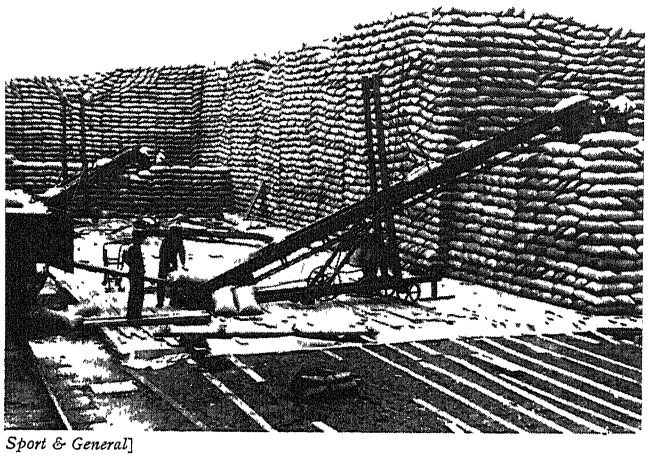
	Aug. 1, 1937, to July 31, 1938	Aug. 1, 1936, to July 31, 1937	Aug 1, 1935, to July 31, 1936
United States . .	13,750,000	—	—
Canada . .	10,790,000	24,280,000	31,880,000
Australia . .	15,550,000	12,560,000	12,830,000
Argentina .	8,920,000	20,150,000	8,730,000
Russia .	5,350,000	600,000	3,500,000
India .	2,300,000	2,310,000	100,000
Rumania	4,020,000	4,690,000	730,000
Bulgaria . .	980,000	970,000	150,000
Yugoslavia .	590,000	2,290,000	100,000
Hungary . . .	1,650,000	3,250,000	2,190,000
Tunis . .	630,000	—	580,000
Algeria . .	890,000	900,000	1,650,000
Morocco . . .	300,000	—	610,000
Poland . . .	100,000	680,000	900,000
Minor countries	1,050,000	2,570,000	1,580,000
Grand Total .	66,870,000	75,250,000	65,530,000

Net Imports

(Quarters 480 lb)

	Aug. 1, 1937, to July 31, 1938	Aug. 1, 1936, to July 31, 1937	Aug. 1, 1935, to July 31, 1936
Gt Britain and N Ireland . .	24,330,000	24,560,000	27,710,000
Eire . . .	1,640,000	1,580,000	1,830,000
France and Colonies .	2,140,000	2,020,000	1,450,000
Italy and Colonies .	1,240,000	8,500,000	2,000,000
Germany . .	4,780,000	3,980,000	—
Belgium . . .	4,640,000	4,920,000	4,880,000
Holland . . .	3,030,000	2,690,000	2,740,000
Spain . . .	2,500,000	1,600,000	—
Portugal . . .	300,000	20,000	—
Denmark .	850,000	830,000	1,150,000
Sweden . . .	—	60,000	—
Norway . . .	890,000	1,090,000	950,000
Finland . . .	380,000	450,000	550,000
Czechoslovakia .	180,000	—	270,000
Austria . . .	950,000	1,230,000	900,000
Switzerland . .	1,870,000	2,220,000	2,090,000
Greece . . .	2,280,000	2,690,000	1,850,000
Other countries .	500,000	600,000	500,000
Total Europe .	52,500,000	59,040,000	48,870,000
Total ex-Europe.	12,890,000	14,810,000	16,990,000
Grand Total .	66,390,000	73,850,000	65,860,000

Prices. The international price of wheat fell sharply during the summer and autumn months of 1938, reports of large harvests being received from practically all northern hemisphere countries. Further measures were conceived to protect growers from the impact of these low prices. In Europe, the protection assumed the form of increased import duties, import quotas, and tighter milling regulations. The problem in oversea surplus-producing countries proved more complicated in view of the extremely heavy volume of grain involved. The most popular measure introduced in such countries was a guaranteed price for the grower and a subsidy on exports. This form of protection is at present enforced in Canada, Argentina, and Rumania. In the United States, the grower is required to co-operate with the government in plans for acreage reduction and soil conservation before he is entitled to special payments pro-



Sport & General]

AUSTRALIAN WHEAT BEING STACKED AT MELBOURNE FOR SHIPMENT TO ENGLAND

vided by the Agricultural Act. Australia guarantees high prices in respect of wheat used for home consumption.

Mean Price of Good Red Wheat on the Spot at Liverpool

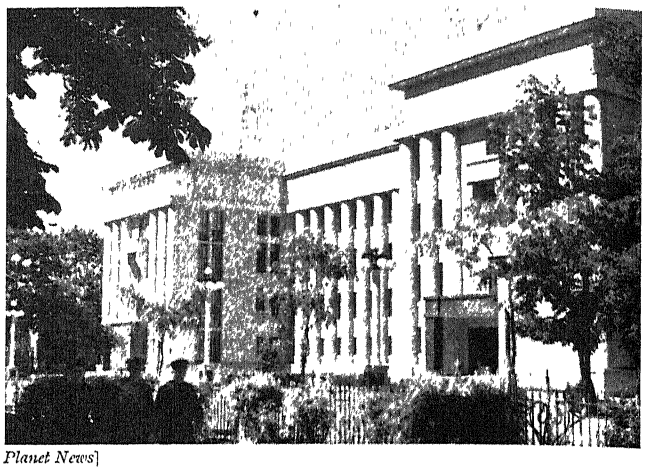
(Shillings and pence per 100 lb.)

	1938	1937	1936	1935
	s d	*s d.*	*s d.*	*s. d.*
January	7 8	9 3½	7 1	5 0
February	7 9	8 10	6 7½	4 10
March	7 5	9 5½	6 5	5 1
April	7 2	10 1½	6 5	5 6½
May	7 2	9 10	6 4½	5 6½
June	7 3	9 2½	6 3	5 6
July	6 9	10 3	6 10½	5 3
August	6 2½	9 4½	8 2	5 8
September	5 7	9 6	8 0	6 8½
October	5 2	9 5	8 8½	7 0
November	4 7	8 7	8 6	6 9½
December	4 8½	9 0½	9 2½	6 9
Yearly Average	6 5½	9 5	7 5	5 9½

(G. P. B.)

WHITE RUSSIAN S.S.R. On June 26 the elections to the Supreme Council of this Republic of the Soviet Union took place, with a record percentage of the electorate voting —99·65 per cent. In Minsk, according to official estimates, even 100 per cent of the inhabitants handed in their voting papers. All 273 chosen members naturally belonged to the communist and non-party *bloc*, as it was the only list allowed at the elections. The first session of the Council took place at the end of July in Minsk. The election of a new government gave the deputies ample chance to express their critical attitude towards the general administration of the former government, and also towards the activities of individual Commissariats (for example, those for trade, education, agriculture, local industry, timber industry, etc.). Kuzma Kiselev was chosen as the Chairman of the White Russian government.

Area and Population. Area 49,035 sq. miles. Population (1933): 5,439,000 (rural 4,549,000, urban 890,000), made up of 80·6 per cent White Russians, 8·2 per cent Jews (chiefly in the towns), 7·2 per cent Russians, and the rest Ukrainians and Poles. In 1935 there were 135,000 workers in heavy industry. The chief languages are White Russian, Russian, and Yiddish. Leading cities: the capital, Minsk



Planet News]

THE HOUSE OF THE RED ARMY IN MINSK, CAPITAL OF SOVIET WHITE RUSSIA

(1936) 198,000 inhabitants, Vitebsk 143,800, and Gomel 139,500.

Economic Life. In 1938 there were about 10,000 collective farms, comprising 685,000 peasant households, and 140 machine and tractor stations with 8,072 tractors.

Industrial output (1937) 2·1 million roubles. Budget (1938): 1·167 million roubles.

Cultural Life. Expenditure on adult education (1937): 27 million roubles. In 1938 there were 7,032 schools with about one million children, and 117 higher educational institutions and technical colleges with 47,600 students. There were also 2,700 physicians, 618 polyclinics, 829 medical centres for women and children, and 326 medical centres in the villages. (S. YAK.)

WHOLESALE PRICES: *see* PRICES, STATISTICS OF.

WHOOPING COUGH: *see* INFECTIOUS DISEASES, ACUTE.

WILD LIFE, CONSERVATION OF. The Pilgrim Trust has allocated an annual grant of £100 for five years towards the endowment fund of Wicken Fen, Cambridgeshire, which is a relic of the original undrained fen-land. The standing committee on National Parks of the Councils for the Preservation of Rural England and Wales states as an essential part of its policy, that, whenever possible, strict nature reserves should be included in the areas of national parks. The Council for the Preservation of Rural England organized the eleventh annual national conference for the preservation of the countryside, which was held at Chester in October. At the conference, the necessity for speedy action in establishing national parks, regional parks, and coastal reservations was urged. The Green Cross Society added the promotion of national parks to its objects and published a booklet, *Wild Life and Rare*.

Mr. Chamberlain, the British prime minister, sent a message to the International Committee for Bird Preservation, which met in Rouen on May 6 and 7, 1938, to discuss questions relating to the preservation of migrating birds.

In parliament, the Wild Birds (Ducks and Geese) Protection Bill was read for the third time and passed in the House of Lords on Dec. 7, 1938. On July 6 the Protection of Animals Bill (No. 2) was read a second time in the House of Commons and then was withdrawn on July 12. On July 14 Sir R. Gower introduced a third Protection of Animals Bill to stop cock-fighting. The object of the Bill is to make the possession of any animal trained for fighting or baiting an offence and to apply the same prohibition to the



Fox Photos]

ELEPHANTS BATHING, PHOTOGRAPHED IN THE KRUGER NATIONAL PARK, SOUTH AFRICA

possession of any instrument adapted for use in fighting or baiting.

The Scottish Nature Reserve Committee, a newly formed offshoot of the Royal Scottish Zoological Society, has drawn up plans for a chain of natural reserves for Scottish native wild birds and animals, and proposes to buy one of the smaller western islands as a seal and sea-bird sanctuary

Europe. An area of more than 100,000 acres of wild forested lands in East Prussia has been set aside as a reserve for moose. The land, near the city of Konigsberg, belongs to the State of Prussia. In Spain, the society formed for the protection of plants and animals has been forced to suspend its operations because of the war. Both Turkey and Cyprus are now protecting the moufflon and Russia is trying to acclimatize it. Most of the Russian nature reserves have the definitely commercial object of protecting fur-bearing animals, but the Astrakhan Reserve was formed to encourage the study of delta formation, to protect the breeding of water fowl and fish and to encourage the growth of rare plants.

Asia. In India, steps are being taken to protect the wild ass, and in the Gir Forest Sanctuary the protected lions are increasing in number. Protection of wild life in Ceylon extends to the tamarind tree and the Judas tree. In Malaya, the fauna of the new National Park includes tropical birds, the rhinoceros, elephant, and tapir, which are now protected.

Africa. An outbreak of foot and mouth disease in the Kruger National Park was confined to the park and did not spread to the animals outside. The Tanganyika Game Department reported that witch-doctors, who make profit out of selling charms against lions, opposed the killing of man-eating lions.

South America. In Chile, the *huemul*, a kind of hare, which figures in the coat of arms of the country, is strictly protected, but it is threatened with extinction from its natural enemy, the condor. The sandal-wood tree, which grows on the island of Juan Fernández, is now preserved after undue exploitation. In south Brazil, an area of 45 sq. miles of virgin forest, containing a unique flora, is set aside as a reserve. (V. R.)

North America. In the United States there was initiated a programme that promises to become one of the most potent influences in the history of American wild-life conservation Under its authorization of annual appropriations not to exceed the excise tax of ten per cent on arms and ammunition, which amounts to about $3,250,000 a year, Congress on June 16, 1938, appropriated $1 million for the first year's programme beginning July 1, 1938. Federal funds are apportioned to the States on the basis of land area and hunting licences sold, and each State must contribute 25 per cent of the cost of acquisition and development of land and water areas for wild-life purposes and research in the problems of management.

Sixteen new bird refuges, administered by the Biological Survey, were established by Executive order in 1938. The total number of Federal refuges primarily for the protection of bird life is now 225, embracing 3,944,656 acres. On nine other refuges, totalling 3,916,297 acres for such big-game animals as buffalo, antelope, and mountain sheep, incidental protection is accorded to birds. Sixteen refuges, mainly for the protection of sea birds in Alaska, Hawaii, and Puerto Rico, with an aggregate acreage of 4,093,137, raise the number of Federal refuges to 250, with a total area of 11,954,090 acres.

The rehabilitation of land and water areas for birds has included such measures as the stabilization of water levels, the planting of aquatic plants and food-bearing shrubs and trees, and the construction of nesting islands and upland game bird shelters. Substantial increases in the numbers of birds using the refuges were noted. Among the outstanding new acquisitions may be mentioned the Wheeler Migratory Waterfowl Refuge, in Alabama, containing 41,800 acres and the Great White Heron Refuge, in Monroe county, Fl., containing about 2,000 acres.

Under the terms of the Migratory Bird Treaty the United States and Canada co-operate in the protection of migratory birds. Of unusual importance in this connexion during the year was the establishment by the government of Ontario of the Hannah Bay Waterfowl Sanctuary, at the south end of James bay on an important migration route. The refuge

includes a marsh area about ten miles in length, regularly frequented by thousands of blue geese on their way from their restricted breeding range along the east shore of Hudson bay to similarly circumscribed wintering grounds along the coasts of Texas and Louisiana.

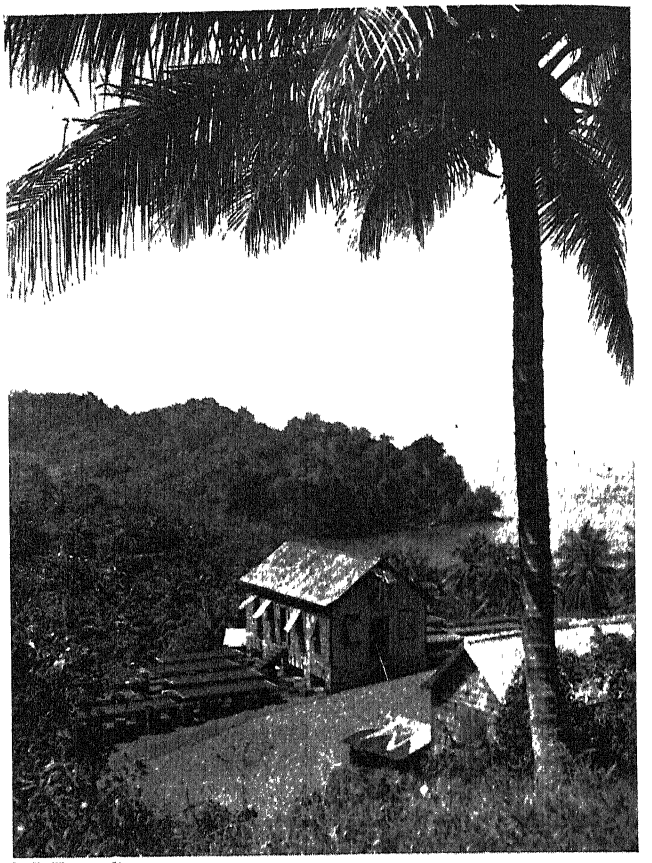
Antarctic Regions. Efforts to bring to bear the international co-operation necessary to save certain especially valuable, and therefore much-sought, species of whales have been under way for some years. The International Agreement for the Regulation of Whaling, signed at London, June 8, 1937, represented a notable step in the desired direction. Another international conference in London in June 1938, resulted in the signing of a protocol embodying amendments of the agreement of 1937 and a final act by delegates representing the Union of South Africa, the United States of America, Argentina, Canada, Denmark, Eire, France, Germany, the United Kingdom of Great Britain and Northern Ireland, Japan, New Zealand, and Norway. Under an important provision additional to the agreement it was forbidden for one year to take humpback whales (*Megaptera novæangliæ*) by means of any pelagic expedition in Antarctic waters, owing to the especially urgent need for their protection. Another article of the protocol established a sanctuary for two years for baleen whales in a sector of the Antarctic ocean between Graham's Land and the Ross Sea. The principle of sanctuaries was further extended by the absolute protection of all whales against pelagic whaling in the Arctic ocean. (*See* also FISHERIES.)

WILHELMINA [WILHELMINA HELENA PAULINE MARIA OF ORANGE-NASSAU] (1880–), Queen of the Netherlands, succeeded to the throne on the death of her father, William III, on Nov. 23, 1890, her mother acting as regent until Sept. 6, 1898 (see *Ency. Brit.*, vol. 23, p. 601); her consort, Henry, Prince of the Netherlands and Duke of Mecklenburg-Schwerin, whom she had married in 1901, died on July 3, 1934, there is one daughter, Princess Juliana (see *Ency. Brit. Book of the Year*, 1938, p. 357), the heiress to the throne, whose only child, a daughter, was born on Jan. 31, 1938.



Associated Press]
QUEEN WILHELMINA

Queen Wilhelmina, the only sovereign now living of all those who occupied thrones when she ascended hers, celebrated the fortieth anniversary of her accession in the autumn of 1938 amid great rejoicing in which the love of her people, both at home and in the colonies, and the respect of other nations was very evident. On Aug. 25 she received the delegates to the Inter-Parliamentary Union, then in session at The Hague; the official celebrations lasted from the 29th to Sept. 11 and included a broadcast by her, addressed specially to the youth of the country, a commemoration service at the Nieuwe Kerk, Amsterdam, a naval review, pageants, and the bestowal on Her Majesty of an honorary doctorate of Economic Science by the University of Amsterdam. In London a thanksgiving service was held at the 400-year-old Dutch Church at Austin Friars, in the City.



S. J. Hayward]
ON A COCOA PLANTATION IN GRENADA, WINDWARD ISLANDS, SHOWING COCOA DRYING PANS OUTSIDE THE HOUSE

WINDWARD ISLANDS. Mr. A. A. Wright, Administrator of St. Vincent, on transfer to St. Lucia in June 1938, was succeeded by Major Bain Gray.

Exceptional rainstorms occurred in October and November. Resulting landslides in St. Lucia caused over 200 casualties (111 dead), and the Imperial Parliament voted £16,000 for relief. Damage in Grenada was estimated at £20,000. Part of the Royal Commission reached the Colony in December. Grenada had a record nutmeg crop and good cocoa crop. St. Vincent's arrowroot exports were 35,902 barrels, against 36,653 in 1937. (A. A.)

Area and Population:
Area, total, 521 sq. miles.
Population (est. Dec. 31, 1937) 213,131.
Chief Towns: St. George's, Grenada (cap.); Castries (St. Lucia).

Governor. Sir H. B. Popham, K.C.M.G.

Language. English.

Production (export figures) **1937:**
Grenada: cocoa (£160,030); nutmeg (£105,264); mace (£61,895); bananas (£14,650); lime oil (£5,558).
St. Lucia: sugar (£62,313); cocoa (£13,357); lime oil (£13,133); bananas (£11,814).
St. Vincent: arrowroot (£90,311); Sea Island cotton (£34,059); copra (£13,518); syrup and molasses (£10,523).

Overseas Trade, merchandise, 1937:
Imports: Grenada £367,707; St. Lucia £244,851; St. Vincent £203,254.
Exports: Grenada £362,075; St. Lucia £137,286; St. Vincent £184,544.
Re-exports: Grenada £38,584; St. Lucia £76,794; St. Vincent £2,115.

Roads: metalled, 529 miles.

Finance:
Revenue, ordinary (est. 1939): Grenada £147,326; St. Lucia £82,392; St. Vincent £91,940.

Expenditure, ordinary (est. 1939) Grenada £172,803; St Lucia £96,819; St Vincent £91,677.
Public Debt (Dec. 31, 1937): Grenada £383,137, St. Lucia £117,606; St. Vincent £95,390.
Currency: sterling.

Education 1937:

Elementary, schools 145; scholars 48,119.
Secondary, ,, 7; ,, 408.

WINES. It was a late harvest in the European vineyards in 1938. Picking was delayed wherever possible, because of the retarded condition of the grapes. Then came a temporary labour famine, so far as France was concerned, due to the partial mobilization when peace seemed in jeopardy.

In the spring the European vines had begun to vegetate unduly early as a result of a mild winter. Frosts therefore caused great havoc in April and May, and after the frosts, drought began to trouble the growers. It was a temperate, somewhat sunless sort of drought, however, and it had its compensations by keeping away those diseases encouraged by heavy, humid atmospheres The great enemy of the grapes prior to the 1938 harvest was *coulure*.

The unusual prolongation of the picking should produce some interesting results in the 1938 wines. For instance, in Burgundy the first wines—mainly from the lowland districts—were found to be deficient in colour and alcohol Fine sunny weather prevailed in the latter part of the harvest, however, so that when labour was released after mobilization, those vineyards in favoured positions where the picking could be delayed with reasonable safety, were found to have benefited immensely from the improved climatic conditions.

Similar conditions, apart from the mobilization, were experienced in other countries in the same latitude as France; and even as far south as Tunisia, the low strengths experienced at the beginning of the vintage were balanced by the higher alcoholic degrees experienced at the end of the harvest. In Germany, which boasts of Europe's most northerly vineyards, the vintage is normally harvested later than everywhere else.

Once more the vineyards supplying the sherry bodegas had their grapes harvested under war conditions. In Franco Spain (wherein the sherry district is situated), normal agricultural and commercial activities seem to have been carried on to a remarkable degree, despite the prolonged civil war. So far as the wine trade is concerned, Government Spain does not seem to have been so successful. Tarragona and Valencia wines now appear to be unprocurable in the export markets. For some time past England has been finding substitutes for these wines in her Empire vineyards.

In the southern hemisphere, where the vintage is harvested some six months earlier, the vine is extensively cultivated in the South American countries, Australia and South Africa. With the exception of these two latter, which enjoy a large market in England, only negligible quantities are exported north. Australia harvested a record vintage in 1938, but the larger production was due to the planting of additional areas with vines, despite all warnings of the grave economic consequences of such a course. A limitation of planting, together with a campaign to stimulate home and export sales, is advocated.

The 1938 International Wine Congress, held in Lisbon, also suggested a limitation of planting to cope with the almost universal problem of over-production and under-consumption. In the United States, however, Mr. W. S. Alexander, head of the Federal Alcohol Administration, has suggested that American wineries should raise their annual output from twenty million gallons to fifty million gallons. He estimates the commercial wineries can sell the extra thirty million gallons to the people, who now make that amount of domestic wine in their homes. (D. F. C.)

WINTER SPORTS. Winter sports, under which heading are included skating, ski-ing, bob-sleighing, and curling, attract increasing numbers to the various European centres, and these themselves are receiving additions yearly in Austria, N. Italy, and parts of Scandinavia and Finland, as well as in their original home, Switzerland, some of whose grounds are now within 4½ hr flying from Croydon In England the climatic conditions that make their practice possible are rare, but attendances at indoor rinks are on the up-grade, and a spectacle staged at Earl's Court, London, at the end of 1938, in which were given realistic displays of ski-ing, drew large and appreciative audiences.

For the European figure-skating championship, held at St. Moritz in January, there were fourteen men and twelve women entrants, the British team comprising the British champion, H G. Sharp, and the runner-up, F. Tomlins; Miss Cecilia Colledge, the world's, European, and British champion, and the Misses Megan Taylor, D. Walker, P. Stephany, and G Jagger. Last season's men and women champions, F. Kaspar (Austria) and Miss Colledge retained their titles, as did Ernst Baier and Fräulein Maxie Herber (Germany) in the pair-figure and pair-skating events. Miss Colledge also won the Swiss championship at Adelboden (Jan. 30), but in the contest for the world's title at Stockholm on Feb. 6 she lost by a narrow margin to Miss Megan Taylor. The English-style figure event was won by J Wilson, of the Manchester Skating Club, which club was the winner of the challenge cup for teams of four. Two records were broken during the season, both at Davos: on Feb. 5, H Engnestagen (Norway) did the 500 metres in 41·8 sec., and on the next day I. Ballangrud and C. Mathisen, in a dead heat, knocked 3 sec off the 10,000 metres at 17 min. 14·4 sec., or rather over 21½ m.p.h.



Sport & General]
MISS MEGAN TAYLOR, WORLD FIGURE-SKATING CHAMPION OF 1938, AT ST. MORITZ, SWITZERLAND



Keystone]
SKI-JUMPING FOR THE MORVEN CUP ON THE OLYMPIA LEAP AT ST. MORITZ, SWITZERLAND, DEC. 1938

Albert E. Tebbit, British amateur champion from 1895 to 1905, and the first holder of the King's Cup, died in March.

Skating in the U.S.A. was in 1938 dominated by Vic Ronchetti, who captured three of the four major championships of the Amateur Skating Union : the men's North American outdoor and indoor titles and the men's national outdoor crown. The men's national indoor title went to Leo Friesinger. In women's events, Miss Janet Milne won the North American outdoor title, and Mrs. E T. Dyer the N.A. indoor crown. Robin Lee won his fourth successive victory in the men's national figure-skating tourney ; Miss Joan Tozzer won the ladies' singles, and Bernard Fox, the senior pairs' title.

The ski-ing world's championships took place at Lahti, Finland, in February, and Engelberg, Switzerland, in March, the *langlauf* and jumping events at the former, and the downhill and slalom at the latter. The relay race (forty km.) was won by Finland, which also took first, third, fifth, and sixth places in the 18 km., in which 200 competitors from nine countries took part. The fifty-km. cross-country went to K. Jalkanen (Finland), at 4 hr. 6 min. 9 sec., and the combined *langlauf* and jumping event to Olaf Hoffsbakken (Norway). In the men's race for the downhill, France, Germany, and Switzerland were first, second, and third, Great Britain being bracketed ninth with Italy ; in the women's the order of the first five of the fourteen competing nations was—Germany, Switzerland, Norway, U.S.A., Great Britain. Swiss, French, and German skiers were the first three in the men's slalom, and German and Swiss (2) in the women's ; the combined results (downhill and slalom) gave the orders—men, Allais (France), Rominger (Switzerland), Lantschner (Germany) ; women, Fräuleins C. Cranz (Olympic champion), L. Resch, and Grasegger (all Germany) R. Rominger, the Swiss world champion, also won the international slalom race for the Titulescu Cup for the second year in succession, the women's event going to the American skier, Miss M McKean (*see* below), while Fraulein Cranz also won the women's downhill in the international meeting held at Garmisch-Partenkirchen in January. J Palmer-Tomkinson, the British Olympic skier, won the Muraigl Cup (Klosters), for combined downhill and slalom. At Pontresina, in March, Rominger won the Diavolezza downhill in the record time of 10 min 53·6 sec , beating his own previous record by 2 min. 13 sec. ; A. Sheuing was second (11 min 43·8 sec.) and E. Remalter, last year's winner, third.

Dave Bradley of Dartmouth won the U S national titles in both the downhill and combined events, and Ed Meservey, also of Dartmouth, captured the national slalom title. The national open and class A downhill events were won by Ulrich Beutter. Birger Ruud of Norway won the open title in ski jumping, with 194 ft. and 192 ft., and the class A title went to Sigurd Ulland of California. The outstanding woman ski racer of the U.S A. is Miss Marion McKean of Massachusetts, winner of the national downhill title. Mrs. Grace Carter Lindley won the national slalom event.

The world championship meeting for bobsleighs was held at Garmisch-Partenkirchen in January and for boblets at St Moritz in February ; at the former the British crew, under F J. McEvoy, retained the four-man title, Germany being second ; at the latter the holders, Great Britain, were defeated by Germany. In the Cresta Run events the principal results were as follows : W. Fiske, of the U.S.A., won the Grand National and the Cartwright and Coronation Cups, and at 56·7 sec. broke his own record for the Cresta Run from Top when winning the Morgan Cup , the U.S.A. won the four-man race for the Netherland Cup and the Argentine Cup for boblets, and were second to Switzerland in the Gold Cup ; the St. Moritz boblet Grand Prix went to Germany, Britain and the U.S.A. being second and third ; Dr. H. Bruene (Germany) won the Deterding Cup (boblets), Baron Lunden (Belgium) the Bott Cup, and the Coppa d'Italia went to F. McCarthy for the second successive time.

In America the sport is making great progress and speed is increasing. The 1936 Olympic winners of the two-man bob, Ivan Brown and Alan M. Washbond, won the national A.A.U. two-man championship on the run at Lake Placid, N.Y., on Feb. 12, 1938. The four-man national A.A.U. title was won by Aubrey Wells, Warren Martin, Hubert Nye, and John Otis.

In British international curling Scotland beat England at Manchester by 265 shots to 241, a closer result than for many years but giving Scotland their fourteenth successive win. The Jackson Cup, generally recognized as the curling championship, was played for at Gstaad and won by Engelberg (skipped by Sir John Jarvis, Bart.), who defeated Wengen (G. Paxton, skip). The Gossage trophy, the chief fixture at St. Moritz, went to the No. 1 team (M. Robertson, skip) against Engadina ; the Cook Shield (Kandersteg) was won by Bridge of Weir with sixteen points, Victoria I and Schweizerhof being runners-up ; and Kulm beat Carlton by 16 stones to 6 in the final of the Cresta Palace tournament at Celerina. (L. H. D.)

WISTER, OWEN. American novelist, was born in Philadelphia in 1860, his mother being daughter of the famous English actress Fanny Kemble. He was first attracted to music and, after leaving Harvard, crossed to Europe in 1882 to continue his studies, being recommended by Liszt to study composition in Paris. But in 1883 his

health broke down and like his friend Theodore Roosevelt he was sent to live in the open air of the Western plains in search of renewed vigour. He returned east for a brief spell and was called to the bar in Philadelphia, but ill-health once more made it necessary for him to live in the open. When he adopted literature as a profession it was natural for him to choose the American west as a background, but he wrote a number of other Western tales without attracting much attention before the instantaneous success of *The Virginian* in 1902 By the creation of its cowboy hero, Wister did for the cowboy what Bret Harte had done for the miner None of his later novels proved quite as popular as *The Virginian*. In addition to fiction, Wister wrote several biographies and in 1930 published an intimate study of his friend Theodore Roosevelt. He was married and had six children He died at his summer home in North Kingston, Rhode Island, on July 21, 1938.

WOOD, SIR (HOWARD) KINGSLEY, M.P (1881–), British statesman, the son of a Wesleyan minister, was admitted a solicitor in 1903, entered public life as a London County Councillor for Woolwich in 1911, and has sat in parliament as Conservative member for Woolwich West since 1918. Between 1919 and 1929 he was parliamentary private secretary to various ministers of Health, from Sept. to Nov. 1931 he was parliamentary secretary to the Board of Education in the National Government, and in the latter month became postmaster-general, effecting many reforms during his tenure of office, which lasted till Mr Baldwin became prime minister in June 1935, when he was transferred to the ministry of Health

As minister of Health Sir Kingsley was responsible for many important measures, including the Midwives Act, 1936, and the Public Health Act, 1937, and did much to stimulate the campaigns against cancer, tuberculosis, and rheumatism; he retained the office till May 16, 1938, when he succeeded Lord Swinton as minister for Air, and in that capacity has been the leading figure behind all recent developments both in the air arm and civil aviation.

Sir Kingsley was knighted in 1918 and made a privy councillor in 1928; in 1908 he married a daughter of Henry Fawcett, the famous blind postmaster-general of Mr. Gladstone's administration of 1880; there are no children.

WOOL. A survey of the world's wool textile industries during 1938 is largely a précis of political conditions. The two largest wool-consuming countries, Britain and the United States, have consumed distinctly less than in 1937. Japan has imported less, and turnover in France, Belgium, the Netherlands, and Italy, despite a slight increase, has been subnormal. Mills in Russia are stated to have been consistently well employed, but no trustworthy statistics are available, and Germany appears to have been the only totalitarian state in which employment, unlike that of democratic countries, has not felt the effects of tariffs and of the diversion of a huge section of national income into armaments. German wool consumption in 1938 has been state controlled at almost as low a figure as in 1937, but imports from South America, South Africa, and Australasia (in that order) are almost fifty per cent higher, with the result that German reserve stocks of wool, for consumption at recent rates, are reported ample for five or six months.

State trading has continued. Germany, Italy, Japan, and Russia do not allow their mills to compete with one another for raw material in the world's markets, and henceforward Germany, by controlling the Austrian and Sudetenland mills, will tend still further to reduce free competition. The further invasion of China by Japan has cut off British Empire wool exports to the latter country, which formerly absorbed about eight million lb. per annum of British produced tops, mostly crossbred, in addition to considerable weights of wool, yarn, and fabrics. The democratic countries, with the exception of the United States, have found it difficult to counter German buying competition in South America and South Africa, where bilateral treaties for the exchange of goods have given Germany a considerable advantage

The practice of national self-sufficiency has continued to depress prices of wool One reason for Germany's good textile employment is that she has reduced her imports of tops, yarns, and fabrics, more particularly from Britain and France, to a negligible amount compared with a few years ago. The control of imports, either by licence or restrictions on the exchange of funds, has also continued to result in lower imports by Italy, Turkey, Greece, and other states Countries losing such export trade have been unable to make it up elsewhere, with the result that they have continued to face the problem of surplus plant Though the United States has never been a prominent cloth exporter, the depression (which appeared to ameliorate from about July) presented the American mill man with the same problem as exists in Britain, France, and the Netherlands, of three looms having to compete for orders only sufficient to run two. These conditions have produced excessive price cutting, with the result that the only remaining method to make money in any section of wool textiles is by long-term speculation

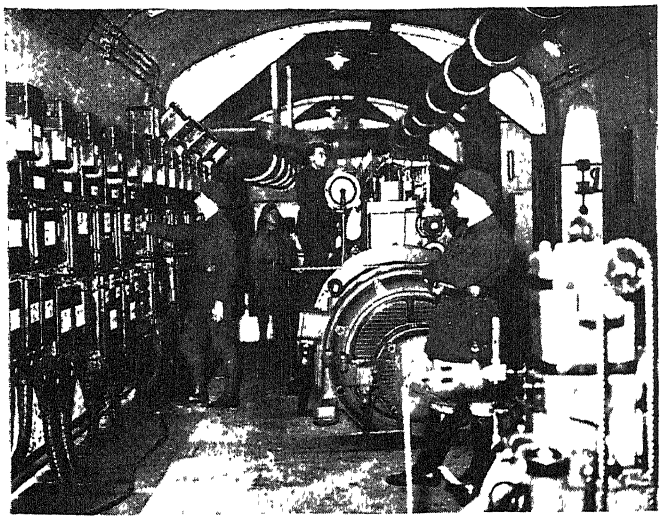
Wool prices showed remarkably little variation throughout the year. The German-South African agreement has, however, virtually reorganized the wool-buying personnel in the Union, there being to-day about sixteen German buying brokers in one centre against four or five some years ago, while French and British brokers have been closing offices.

The threat of war in September was salutary in some respects to many mill owners, since it showed that the current principle of "making the supplier of raw material carry the stock" is unsafe, whether the raw material be wool or piece goods. Textile industrialists of all countries realize better to-day that raw materials, particularly wool, might be of more value in one's own warehouse than in that of the supplier, particularly if he be overseas. The British government purchase and control of colonial wool during the last war was again remembered, and the United States, Canada, and many European countries that still look to Great Britain as a source of supply for some of their wool, raw or semi-manufactured, increased their contracts and asked for hurried shipment during September.

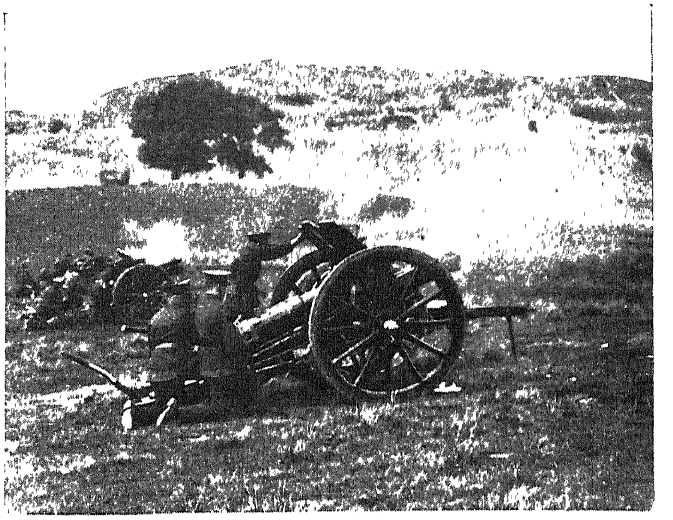
The year has brought out no striking new textile inventions. Possibly the greatest advances have been made in the working on wool machinery of rayon and staple fibre, either unadulterated or mixed with raw wool.

The worsted spinners of Britain are making an attempt to fight price cutting and redundant plant and more dyers have combined to put their processing charges on a remunerative basis. Excess productive capacity continues to hold the door open to disregard of inconvenient contracts, for cloth particularly—an evil felt throughout the year, as in 1937, in all democratic countries, but not in the totalitarian states. (J. A. HN.)

WORLD ARMAMENTS. During 1938 the arming of the world continued at an ever-increasing tempo. Two wars, in Spain and China, combined with the deterioration in international relationships throughout the rest of the world



Sport & General]
PART OF THE CENTRAL ELECTRIC CONTROL STATION OF THE FRENCH MAGINOT LINE FORTIFICATIONS



Fox Photos]
BRITISH FIELD ARTILLERY AT FIRING PRACTICE IN NORTH WALES

to make the year a period of " boom " conditions for the manufacturers of armaments.

Precise information as to the expenditure and relative armament strength of the different Powers is in many cases impossible to obtain ; and as to the state of development of new weapons and equipment, it is so in practically all cases. Thus it is impossible to present an accurate and complete picture of the armaments position of the world at any given time, except too long after for the picture to be of interest. Some Powers, such as Japan, reveal their expenditure without showing what their strength is, others, like Germany, are reticent as to both ; while still others, like Italy, make a parade of each. Some concentrate above all on secrecy as to air strength (again, like Germany), others on secrecy as to naval strength (like Japan). While the general tendencies underlying the world armaments situation are fairly clear, the details of that situation are inevitably obscure.

This obscurity in itself tends to exercise an aggravating influence on the general situation. This was illustrated early in the year, when as a result of a long period of uncertainty notes were presented in Tokyo on behalf of the British, U.S.A., and French governments requesting information as to Japan's naval programme, in particular in relation to her intention not to exceed, in battleship construction, the limits of 35,000 tons per ship and 16 in. as the calibre of a gun. The request was politely rejected, though a somewhat ambiguous phrase in the English version of the Japanese reply suggested that in the battleships then under construction the tonnage limit was not being exceeded.

Conversations between the naval experts of the three Powers which had presented the notes followed. The result of these was made public by Mr. Duff Cooper, then First Lord of the Admiralty, in answer to a question in the House of Commons on June 30, when he said that a protocol to the London Naval Treaty had been signed on behalf of the three Powers providing for a new displacement limitation of 45,000 tons, but retaining 16 in. as the maximum gun calibre.

The year opened with an Italian announcement of an extensive naval building programme, including two battleships of 35,000 tons, twelve ocean-going scouts, and an unspecified number of submarines. Signor Gayda, a writer likely to be well informed on a question of this sort, commenting on the new programme estimated that, when completed, it would bring Italian strength to a total of 8 battleships (4 of 35,000 tons and 4 of 24,000), 7 large and 12 small cruisers, 12 large and 12 small scouts, 20 large and 24 small destroyers, 32 high-seas torpedo-boats, and more than 100 submarines.

This announcement had an immediate effect on French policy, for the consequence of the Italian programme was to place France in a position of inferiority in respect of the larger warships, and to make it also imperative for her to increase the number of her submarines and destroyers if she was to maintain her position. The urgency of filling the gaps in her military and land forces had led her to neglect the navy, and the minister of Marine had admitted in the Chamber in December that the 1937 programme was seriously in arrear. To remedy this 800 million francs of the 3,250 million francs supplementary credits announced by M. Daladier in March were to be devoted to the navy, further credits were voted later in the year, and in May the projected building of two battleships, in addition to various smaller craft, announced in February, was confirmed.

At the end of Jan. 1938 President Roosevelt announced an extensive building programme. As finally approved by Congress this consisted of 3 battleships, 2 aircraft carriers, 9 cruisers, and over fifty smaller ships. In view of the arrangements made with the British and French governments after the unsatisfactory replies received by them to the notes addressed to the government of Japan, it was originally intended by the Administration that the displacement of the battleships should be 45,000 tons, but opposition in Congress led to a modification of this proposal ; and it was settled that the tonnage should be 35,000, but that should the President certify that larger ships were being built abroad, the limit might be raised to 45,000.

The British government also announced an important building programme, of which details are given elsewhere (*see* REARMAMENT, BRITISH). In fact little of the building was to be undertaken until 1939, when the increase of the battleship tonnage to 45,000 was made public.

From the naval point of view, the year ended as it had begun—with declarations of intentions to embark on further construction : this time on the part of Germany. On Dec. 31 it was announced in London that a naval mission had flown to Berlin to discuss the modification of the Anglo-

German naval ratios fixed by the Anglo-German naval treaties of 1935 and 1937. In 1935 Germany had undertaken not to build more than 45 per cent of the British submarine tonnage unless some change of situation occurred, in which case Great Britain was to be notified. The position was that Germany actually had 72 submarines as against Great Britain's 69, but they were of course small submarines Germany felt that the situation required that she should have submarines available for ocean-going purposes and expressed the intention of building up to the same submarine tonnage as the British navy. She also expressed the intention of building four additional " A "-class cruisers —*i.e.* cruisers mounting guns of more than 6·1 in. calibre, bringing her total in that class to seven: the ostensible reason for this proposal being that Russia was said to have seven cruisers of the same class.

An interesting table of relative naval strengths was published at the time by a German officer in the *Kölnische-Zeitung*:

	Germany–Italy	Britain–U.S.A.
Battleships	12	46
Aircraft Carriers	2	24
Cruisers	32	126
Destroyers	110	465
Submarines	140	179

The writer significantly added that it was difficult to obtain precise information as to Japan, while attributing to the Russian navy three 35,000-ton battleships on the stocks and the largest submarine flotilla in the world, namely, 180.

It is not possible to gauge the precise accuracy of these figures. But whatever difficulty may exist in computing the relative naval strengths of the various powers is as nothing to the difficulties of assessing their air strength. Owing to the size of ships and characters of building yards, docks and harbours, naval strength is difficult to conceal. The same does not apply, except perhaps as to very broad impressions, to strength in the air.

Great Britain, for instance, makes no secret of her air strength or aims. A first-line strength of 1,750 by March 1939 and of 2,370 by March 1940 has repeatedly been promised as the fruits of the expansion programme. Signor Mussolini proclaimed, in March, an Italian first-line strength of several thousand, an announcement calculated to create the impression that Italy was strong without entering into details on which information useful to other Powers could be obtained. The strengths of the U.S.A. and French air forces can readily be obtained, France for instance aiming at a strength of 2,600, including 900 fighters, by 1940; while that of Germany is swathed in mystery. Lord Lothian, speaking in the House of Lords in May, estimated a total strength of 12,000 to 15,000, of which he computed 8,000 to be first-line aircraft, while Mr. Churchill, speaking in the House of Commons in March, estimated that Germany was spending in 1938 about twice as much on her air force as Great Britain (at the date of his speech estimated to be spending about £111 millions). These figures cannot, of course, be confirmed, but while there can be no doubt as to the great size of the German air force and of the quality of its best aeroplanes, doubts seem to be entertained in competent quarters as to the quality of the workmanship which has gone to produce the ordinary type of aeroplane in service.

Expenditure on the armies of the world has in most cases increased in like measure (For example, the £114 millions odd of the British army estimates for 1938–39, and the $100 millions allocated to the army by President Roosevelt in his programme of Jan 1939 for the purchase of " critical items " such as anti-aircraft guns.) The improvement in anti-aircraft guns, probably the most striking development of recent years in the field of armaments, has necessitated enormous expenditure in all the military countries. The English 3·7 guns, now practically in full production, and the 4·5, soon to be produced, appear to be leading the field in technical respects and much of the British expenditure on equipment, etc. (£43 millions in 1938–39) is attributable to them

Detailed information as to expenditure on armaments, wherever available, is published in the League of Nations Armaments Year Book. No recent figures are available as to Germany, whom Mr. Churchill estimated to be spending on defence £900 millions a year, of which £625 millions was being spent on the army. If this figure was correct when Mr. Churchill published his estimate (in March), the frenzied fortification of the Rhineland in the summer must have very materially increased it. It makes the staggering total of £580 millions estimated for the British defence expenditure of 1939–40 seem relatively insignificant, and the U.S.A.'s $525 millions absolutely so.

Figures published in the League's Year Book throw some light on the part which world armaments play in world trade. Taking the index for 1929 as being 100, exports generally fell in 1934 to 34·3; they subsequently rose to 44·5. Taking the exports of arms, munitions, and implements of war, the figure fell to 52·9 in 1932 and has since risen to 86·8.

While world trade languishes, the arms trade flourishes—the causes of general trade falling being no doubt largely the same as those of the other's prospering. It is evident that the development of the social services is being retarded in countries all over the world by the crushing expenditure on arms. (W. T. We.)

WRESTLING. The sport of wrestling, not to be confused with " all-in " or " free-style " wrestling which, in the opinion of many people, is a somewhat revolting spectacle, and is widely prohibited, continues to attract many enthusiasts, though it is to be regretted that the 1938 Cumberland and Westmorland style championships had to be postponed. The winners in the British amateur championships in the Catch-as-catch-can style were: *fly-weight*, H. Parker; *bantam*, T. Eastell; *feather*, T. Taylor; *light*, A. Thompson, for the fifth successive time; *welter*, L. Herberts; *middle*, S. J. Bissell (second time); *light heavy*, J. Nelson; *heavy*, A. Edwards, the holder in 1930, 1931, and 1935. The annual international event against Scotland was drawn—4 contests each. Jim Londos, U.S.A., retained the world's heavy-weight championship.

Y

YACHTING. In Europe the yachting season of 1938 has naturally been influenced by political disturbances and the financial situation, and in the absence of the bigger boats has been less spectacular than usual, but no less sporting In Canada, the tendency of the last few years has been continued, holding several historic trophy contests in abeyance but giving excellent sport with the little fellows, and incidentally giving the Dominion a clear win over the Royal Norfolk and Suffolk Club with International 14 ft dinghies in connexion with the Canadian Exhibition

The owners of the " J " class and other big racers have been chary of fitting-out, but the smaller classes, from the twelve-metre downwards, have given first-class sport. In Britain there were 48 races for the twelve-metre boats and the " Trivia " and " Evaine " started in all of them, winning 39 and 36 prizes respectively, while " Marina " took third place with 41 starts and 18 prizes

The growing scarcity and cost of paid hands is favouring the smaller boats more and more, as was shown at Cowes Week, which, shorn of many of its former attractions, had record entries of well over 200 yachts on two days. The six-metre class has returned to favour in Britain, after being threatened with eclipse owing to high costs, and the thirty-square-metre class from the Continent has been taken up with enthusiasm. The " Redwing " class of 1896, the longest lived of all, has been revived with modernized rig and fittings. The international element has been rather disappointing in the British regattas, but at Cannes the Italian eight-metre " Bona " won the Coupe de France.

Ocean racing has had an excellent year, with the international element very strong. Among the principal contests the Maas-Harwich Race was won by " Dirk II " for the third time, the Heligoland Race by " Ortac " for the second, the Christiansand–Bridlington by " Maid of Åbo ", the Dover–Christiansand by " Erivale ", and the Christiansand–Copenhagen by " Wanadis ".

A yacht club has been founded among Lloyd's men, and the Royal London celebrated its centenary, the great feature of the celebration racing being a cup presented by the New York Y.C., won by " Trivia ". (F. C. B.)

United States. The increasing use by designers of tank tests with models of new yachts, produced several remarkable yachts in 1938. The new boats, built to any of the rules in use, proved superior in speed to the older boats of the same size, and were the fastest for their size and sail area that have yet been produced within the limitations of the measurement rules. In the racing classes all of the new yachts were built to the International rule, while the strictly American rule (called Universal rule) classes were neglected in so far as new boats were concerned. Several new 12-metre, 8-metre, and 6-metre class yachts were turned out and took part in the racing of those popular classes, while many ocean racing cruisers were built to the measurement rule of the Lake Michigan Yacht Racing Association and adopted during the year by the Cruising Club of America. Nearly all of these boats accomplished notable performances and demonstrated that yacht designing has made a considerable advance during the year. A marked trend in the design of rigs, noted in a number of the new yachts, was towards larger fore-triangles, giving a greater percentage of sail area in the head sails than heretofore, and correspondingly less in the mainsails of cutters and yawls. This change allows a greater variety of, and somewhat larger, Genoa (overlapping) jibs than has been customary.

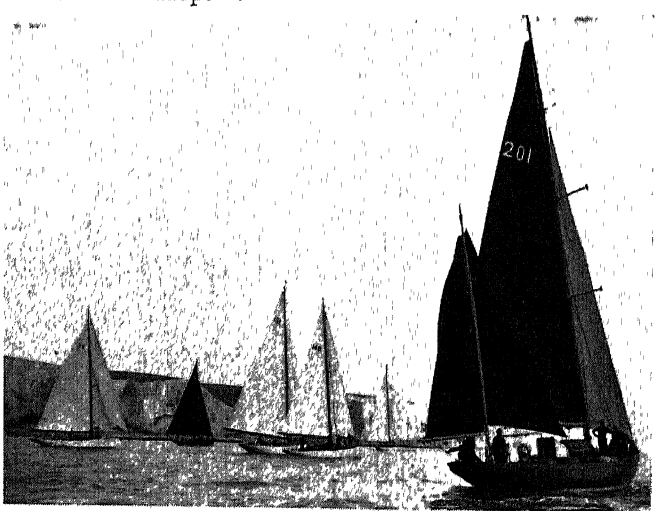
The Scandinavian Gold Cup, held by the Seawanhaka Corinthian Yacht club of Oyster Bay, N Y., was challenged for by Norway, Sweden, Finland, and Great Britain. It was defended, against a yacht from each of these nations, by probably the most noteworthy yacht of the year, the six-metre " Goose ", owned and sailed by George Nichols and designed by Sparkman & Stephens. In the series " Goose " did not lose a single race and, under all conditions met with, proved herself the fastest " six " yet built.

Following this event, a team match was sailed with the British for the British-American Cup, with four boats representing each country The American team won easily, taking four races to one for the British. A challenge from the British for the Seawanhaka Cup, saw " Goose " go down to defeat in a series of three races sailed in very hard weather which suited the challenger, " Circe ", sailed by J. H. Thom, a member of the defeated British-American team.

Star Title. In the Star Class International series, sailed off San Diego, Calif., the German challenger " Pimm " sailed by Walter von Hutschler, took the title by only two points from Harry Nye of Chicago, sailing " Gale ".

Ocean Racing. The biennial ocean race from Newport to Bermuda, was sailed in 1938. Among the 43 starters were yachts from England, Germany, Canada, and the West Coast of the United States. The new yachts, came through in both the large and small classes. " Baruna ", a 72-ft. yawl owned by Henry C. Taylor, won the Bermuda Trophy and Class A prize, while Richard Reynolds' cutter " Blitzen " won in Class B by a wide margin.

On Lake Michigan, the 331-mile Mackinac race, a classic of fresh-water sailing, saw a record fleet of 46 starters. Winners: Cruising Division for Mackinac Cup, James R. Lowe's yawl " Manitou "; Racing Division, Herman Karnstedt's " Hope ".



Fox Photos]

YACHTS SETTING OFF FROM DOVER ON THE DOVER–CHRISTIANSAND OCEAN RACE, JULY 1938

YOUNG, (ALEXANDER BELL) FILSON, British author, was born at Ballyeaston, Ireland, in 1876, and died in London on April 19, 1938 He was special war correspondent for the *Manchester Guardian* during the South African War, after which he was associated with the *Daily Mail* and other papers, but chiefly devoted himself to freelance journalism and authorship In 1914, he organized the Australian Hospital, accompanying it to France, and later received a commission in the R N V R. He was a war correspondent with the B.E F. in France from Nov 1916 to March 1917, when he became special correspondent for *The Times* in Spain and Portugal until 1919 He was editor of the *Saturday Review*, 1921–24, and in 1926 was appointed adviser on programmes to the B B C His many publications included contributions to the *Notable Trials* series; part of the article on "Dance" in the *Ency. Brit.*; *The Relief of Mafeking*, 1900; *The Happy Motorist*, 1906, *Titanic*, 1912, *With the Battle Cruisers*, 1921; *Shall I Listen?*, 1933; and *Growing Wings*, 1936.

YOUNG, DINSDALE THOMAS, British Methodist, was born at Corbridge-on-Tyne on Nov. 20, 1861, and died at Richmond, Surrey, on Jan. 21, 1938. He entered the Wesleyan ministry in 1879, before he was eighteen years of age, and his work subsequently took him to Highgate, Birmingham, York, Manchester, Bayswater, and Edinburgh. From 1906 to 1914 he was minister of Wesley's Chapel, City Road, London; and from 1914 till his death he was minister of the Central Hall at Westminster, where, in 1936, his diamond jubilee as a preacher was celebrated. He was one of the most remarkable preachers of his time, besides being the author of a number of books on religious subjects.

YOUNG MEN'S CHRISTIAN ASSOCIATION. In spite of prevailing political, economic, and religious conditions, the Association is pursuing its work throughout the world, and both its aggregate membership and its field of action have increased. There are now 10,380 Associations in 63 countries, with a total membership of 1,869,963.

During 1938, among the more important international events have been the holding of an international camp for young men at Gdynia in Poland, of an international camp for boys at Dunavecse in Hungary, of a conference for leaders in Y.M.C.A. work in Latin countries at Chaintreauville in France, and of a plenary meeting of the World's Committee at Stockholm, attended by 87 delegates from 28 national movements.

The Association has been specially occupied with the development of emergency work in China. It has rendered similar service in Barcelona, and has taken part in relief activities for refugees in Czechoslovakia. During the time of the September international crisis, the World's Committee took steps to prevent the rupture of friendly relations between the Associations in the countries immediately concerned and to aid those directly affected.

In Great Britain the extensive community services promoted by the Association have been strengthened. There has also been significant progress in the promotion of work for both sexes in co-operation with the Young Women's Christian Association.

See *World's Youth*, published quarterly by the World's Committee, Geneva; *Y.M.C.A. Year Book for 1938*, National Councils of Y.M.C.A.s of Canada and U.S.A. (Association Press, New York); *British Y.M.C.A. Review*, National Councils of Y.M.C.A.s, London and Edinburgh. (Z. F. W.)

YOUNG WOMEN'S CHRISTIAN ASSOCIATION. The outstanding event of the year 1938 was the quadrennial meeting of the World's Council of the Y.W.C.A., held in Muskoka, Canada, in September. At this meeting five main issues were discussed.

1 The need in the coming quadrennium of work with young adults, and of offering opportunities for training youth for a larger place in Association leadership through national and international conferences and camps.

2 Promotion of the study of "Women and the Home", "Women and Public Life", and "Women and the Church".

3. The Council called attention to the important contribution which the Y.W C A can bring to the general œcumenical movement

4. The study of and action on underlying causes involving the education of all groups of the membership, and the promotion of study on various subjects including economic and labour problems, race problems, and the effect of the radio, cinema, and press on public opinion.

5. In considering *International Relations*, the possibility of long-range education for peace was discussed and planned for, and it was decided that in times of international strife the World's Y.W C A should seek for means of assuring that associations in the area of conflict remain part of the fellowship

At the meeting, Miss Ruth Rouse, of Great Britain, was elected president for the next four years. (M. R.)

YOUTH HOSTELS: *see* CAMPING, CANOEING, AND CARAVANNING.

YUGOSLAVIA. Internally, Yugoslavia enjoyed considerable prosperity, largely owing to her increased trade with Germany, and her industrialization proceeded. In February persons convicted for offences in connexion with the Concordat struggle of 1937 were amnestied, and the excommunication of ministers voting for that instrument was withdrawn, the Concordat being finally dropped. The Government was thus reconciled with the Orthodox Church, but otherwise the political deadlock continued. M. Maček, the Croat leader, who had been in touch with the Serb Opposition during the year, visited Belgrade on Aug. 14, and the arrangements concluded in 1937 were confirmed. In the December elections the "Popular Entente" increased its vote considerably, polling 40·21 per cent of the total votes cast, and gaining very large majorities in Croatia and Dalmatia. The Government list, which polled 59·8 per cent of the votes, was successful chiefly in Serbia and Slovenia. The Government *bloc* secured 304 seats in the new chamber, the Opposition 68 seats.

In foreign affairs M. Stoyadinović cultivated improved relations with Bulgaria (*q.v.*) and with Hungary, with whom almost a friendly relation was established after the Bled Agreement (*see* LITTLE ENTENTE). None the less, M. Stoyadinović emphasized on Nov. 13 that Yugoslavia would not yield an inch of territory. In general, he devoted especial pains to cultivating the friendship of Italy (visiting Venice on June 15) and Germany, which he visited on Jan. 15. Here he was particularly warmly received, and Herr Hitler appears to have stressed Germany's interest in "a strong and independent Yugoslavia", while after the occupation of Austria he declared Germany's new frontier with Yugoslavia inviolable. The premier therefore expressed no misgivings about the occupation, although the Opposition was less complacent, particularly in view of Nazi agitation among the Germans of Yugoslavia, and alleged oppression of the Slovenes in Carinthia. This friendship, combined with the Bled non-aggression Agreement, which Yugoslavia and Hungary considered as valid between them, enabled Yugoslavia to watch the Czechoslovak crisis (in which she declared herself neutral) with comparative detachment.



A. Costa]

DUBROVNIK, YUGOSLAVIA

The future orientation of her foreign policy remained somewhat uncertain, as it did not seem clear whether she could maintain her position without some real concessions to some of her neighbours. (C. A. M.)

Area and Population :
Area 95,558 sq. miles.
Population (est. Dec 31, 1937) 15,400,000.
Chief Towns (pop. 1931) : Belgrade, capital, (266,849) ; Zagreb (185,581) ; Subotica (100,058) ; Ljubljana (79,056) ; Sarajevo (78,173) , Skoplje (68,334)

Ruler. King Peter II.

Language, chief. Serbian.

Religion (1931) : Serbian Orthodox 48·7 per cent ; Roman Catholic 37·45 per cent ; Mohammedan 11·20 per cent.

Production 1937 :

Wheat	2,347,400 metric tons
Barley	383,000 ,, ,,
Rye	209,300 ,, ,,
Oats	297,800 ,, ,,
Maize	5,335,900 ,, ,,
Rice	3,000 ,, ,,
Potatoes	1,620,100 ,, ,,
Beet Sugar	33,600 ,, ,,
Tobacco	20,800 ,, ,,
Wine	2,894,000 hectolitres
Flax Fibre	11,100 metric tons
Hemp	50,300 ,, ,,
Wool	14,900 ,, ,,
Lignite	4,574,000 ,, ,,
Coal	428,000 ,, ,,
Iron Ore (metal content)	315,000 ,, ,,
Copper Ore (,, ,,)	39,400 ,, ,,
Lead Ore (,, ,, 1936)	74,800 ,, ,,
Zinc Ore (,, ,, ,,)	60,300 ,, ,,
Bauxite	354,200 ,, ,,
Magnesite	78,600 ,, ,,
Chrome Ore	20,000 ,, ,,
Antimony Ore	1,650 ,, ,,
Gold	2,724 kilogrammes
Pyrites	134,000 metric tons

Labour :
Index of Employment, average (1937) 112·4
(average 1929 = 100) (Aug. 31, 1938) 125·1
Unemployment, number registered, average (1937) 21,650
Unemployment, number registered (Oct. 30, 1938) 12,103

Overseas Trade 1937 :
Imports, merchandise 5,233,800,000 dinars
Exports, ,, 6,272,400,000 ,,

Communications 1937 :
Roads, state *c.* 6,500 miles : other *c.* 19,400 miles
Railways, open to traffic 6,660 ,,
Aviation, passengers carried 5,876 ; goods and luggage carried 191,448 kilogrammes

Finance and Banking :
Revenue, ordinary (est. 1938–39) 12,180,000,000 dinars
Expenditure, ordinary (est. 1938–39) 12,180,000,000 ,,
Public Debt (May 1, 1938) 23,957,625,400 ,,
Notes in circulation (Dec. 22, 1938) 6,602,000,000 ,,
Gold Reserve (Dec. 22, 1938) 1,908,000,000 ,,
Exchange Rate (Dec. 1938) 204–214 dinars = £1 stg.

Education 1937–38 :
Elementary, schools 8,357 ; scholars 1,431,523
Secondary, ,, 197 ; ,, 119,236
Universities 3 ; number of students 16,058

Motor Vehicles : licensed (Dec. 1937), cars 9,000 ; lorries, buses, etc., 3,500 ; cycles 400.

YUKON TERRITORY. Great interest has been aroused in the Yukon by the announcement of plans for the construction by the United States and British Columbia of a highway from British Columbia to Alaska, which would pass through White Horse and Dawson City, and would provide communication with the Alaskan port of Skagway.

The decision of the Dominion government is being awaited regarding the proposal of the premier of British Columbia to extend the boundaries of the province northward so as to include the Yukon, this having been deferred until after the presentation of the report of the Royal Commission on Dominion-Provincial Relations.

Mrs. George Black, who has represented the Yukon in the Dominion parliament since the retirement of her husband (formerly Speaker of the House of Commons) in 1935, has intimated that she will not stand again at the next general election.

The production of gold in the Yukon and the North-West Territories in 1938 is estimated at 71,415 fine ounces, valued at $2,511,309, as against 47,983 fine ounces, valued at $1,678,690, in 1937.

Area and Population :
Area 207,076 sq. miles.
Population (est. 1937) 4,000 (Indians 1,543 ; Eskimos 85).
Chief Town : Dawson (capital).

Comptroller. G. A. Jeckell.

Production :
Fisheries (1936) $13,385
Minerals, including North-West Territories (1936), $2,390,706 (gold 50,359 fine oz. ; lead, 2,568,699 lb. ; silver, 1,100,430 fine oz. ; petroleum $26,995).
Minerals (total value 1937) $3,904,797
Water Power, including North-West Territories, Jan. 1, 1938, developed 18,199 h.p.

Railways (Dec. 31, 1936) : 58 miles.

Motor Vehicles : licensed (Dec. 31, 1936), cars, 134 ; commercial, 119 ; buses, 1 ; cycles, 9.

Z

ZANZIBAR. The government is administered by the British Resident questions of importance are referred to an executive council, presided over by the Sultan, who also appoints unofficial members to a legislative council.

The main industry of the islands is the production of cloves and coco-nuts. The larger plantations are owned by Arabs or Indians, the smaller by Africans There are no European producers, but the government owns plantations. Recent legislation establishes a grading system for the clove industry and the licensing of exporters, and a measure passed in 1938 aims at relieving the agricultural classes from debt. The government is to spend £200,000 for this purpose. A scheme for a land survey based upon aerial photographs is under consideration. (J. L. K)

Area and Population :
Area Zanzibar Is. 640 sq. miles; Pemba Is. 380 sq. miles.
Population (Dec. 31, 1936) 242,578.
Ruler. H.H. Seyyid Sir Khalifa bin Harub, G.C.M.G.
British Resident. J. Hathorn Hall, C.M.G.
Religion. Mohammedan.
Production 1937 (export figures) :
Cloves . . . . . 121,128 cwt. (£411,654)
Copra . . . . . 14,114 tons
Overseas Trade 1937 :
Imports, total . £1,229,831 (bullion and specie £149,005)
Exports, domestic £663,258
Re-exports . . £210,570 (bullion and specie £79)
Roads (Dec. 31, 1937): Zanzibar, 172 miles; Pemba, 73 miles.
Finance :
Revenue, ordinary (1938 est.) . . . £454,990
Expenditure ,, ,, ,, . . . £432,527
Education : Elementary (Dec. 31, 1937)
Government schools, number of scholars . . 2,506
Private schools, ,, ,, ,, . . 2,969

ZINC. Of the current world zinc output, one-half of the producing countries account for 90 per cent of the total, and the other half for 10 per cent. The details for the major countries are shown in the accompanying table.

World Production of Zinc

(In thousands of metric tons)

	1929	1932	1935	1936	1937
Australia . .	50·8	53·7	67·9	70·6	70·9
Belgium . .	197·9	96·3	181·7	195·3	225·6
Canada . .	78·1	78·2	135·3	137·6	143·9
France . .	91·6	49·3	51·5	53·6	60·4
Germany . .	102·0	42·0	124·2	136·4	163·2
Norway . .	6·4	40·1	46·1	45·0	41·3
Poland . .	169·0	85·0	85·0	92·6	107·2
U.S.S.R. . .	3·4	13·7	46·2	65·0	65·0
United States .	573·0	193·7	391·5	474·6	540·1
United Kingdom	59·2	27·3	61·4	61·8	63·1
World Total .	1,472·8	789·9	1,348·6	1,487·6	1,660·5
Exc. U.S.. .	899·8	596·2	957·2	1,012·9	1,120·4

World zinc production rose by 12 per cent in 1937, to a total of 1,660,500 metric tons, the increase being supplied chiefly by the United States, Belgium, Germany, and Poland, with smaller amounts from Japan, France, Canada, and Great Britain; the only decreases of any magnitude were 6,300 tons in Rhodesia and 3,700 tons in Norway. Production during the first 10 months of 1938 dropped 7 per cent below the corresponding period of 1937, with practically all the shortage in the United States; Canada, Great Britain, Australia, Poland, and France were somewhat above the 1937 level, while Germany shows a heavy increase, the 10-month figure for 1938 being greater than the full year 1937.

Reports are still circulated occasionally concerning the prospects of reviving the international zinc cartel for the control of production, which was abandoned several years ago, in view of the active self-sufficiency programmes that are under way in several of the producing countries, it hardly seems likely that a cartel could be formed which would cover satisfactorily the necessary areas.

British Empire zinc-ore production centres in Australia, Canada, Newfoundland, and Burma; Northern Rhodesia has a small output, and Great Britain still less, though the latter's metal production is increased by the smelting of Australian ores Empire production of zinc in ore is 29 per cent of the world total, but the metal production is only 18 per cent, due to the exportation of Empire ores to other countries The distribution of ore and metal production in 1937 was as follows, in long tons:

	Zinc Content of Ore	Smelter Output of Metal
United Kingdom .	7,600	62,000
Northern Rhodesia .	18,800	14,000
Canada . . .	183,300	141,600
Newfoundland .	63,100	—
Burma . . .	58,600	—
Australia . .	203,500	69,800
Total . . .	535,000	287,000

Primary zinc production in the United States in 1937 increased by 13 per cent to 556,000 short tons, 1 per cent of which was from foreign ores; 79 per cent was distilled zinc and 21 per cent electrolytic; in addition there was a recovery of 175,400 tons of secondary zinc, although not all of this was in metallic form. Production for the first 10 months of 1938 was at the rate of 445,000 tons annually, a decrease of 18 per cent from the 1937 rate. The zinc industry in the United States is usually practically self-contained, exports and imports being negligibly small, but late in 1937 imports, increased to supply a temporary shortage, totalled 37,200 tons by the end of the year; 1938, however, returned to the normal low level. Protest has been filed with the U.S. Department of State against the tariff concessions on zinc ore and metal granted under the new trade agreements with Canada and Great Britain, which were signed on Sept. 17, 1938, and became effective on Jan. 1, 1939, lowering the rate on metal from 1·75 cents to 1·40 cents, and that on zinc in ore from 1·50 cents to 1·20 cents per pound of zinc.

ZOG I (1895–), King of Albania. Ahmed Zogu was born on Oct. 8, 1895, at Burgajet, Albania, and proclaimed king as Zog I on Sept. 1, 1928 (see *Ency. Brit.*, vol. 23, p. 960). Albania has in recent years come more and more under the influence of Italy, but under King Zog's rule the country has enjoyed an unwonted era of peace which shows hopeful signs of approaching prosperity.

On April 27, 1938, King Zog, the only Moslem monarch

in Europe, married at Tirana the Hungarian Countess Geraldine Apponyi, a Catholic: the Italian government was represented at the wedding by the foreign minister, Count Ciano, but the "mixed marriage" drew a strong protest from the Vatican. In September popular celebrations marked the completion of ten years of the monarchy, and on Nov. 28 the king opened Albania's first broadcasting station at Tirana

ZOOLOGICAL GARDENS. At the Regent's Park Zoo, London, a new children's zoo in one of the park paddocks took the place in 1938 of the old "Pet's Corner" Opened on June 2 by two sons of the United States ambassador, Mr. Joseph Kennedy, it was attended by 90,000 people during the season. New features were a penguin pond and a miniature reptiliary.

The re-opened monkey hill was stocked with Indian rhesus monkeys, the penguin pond was re-decorated, and new shower baths were installed; and the construction of the new elephant house is progressing. Lord Moyne presented animals from the West Indies, Mr. C. S. Webb brought back humming birds from Ecuador and the rare "Chimborazian hill-star" Mr. T. O. M. Sopwith brought Galapagos penguins and Galapagos land iguanas. The late Lady Warwick bequeathed a collection of parrots and parrakeets. The Zoo purchased three young giant pandas from Mr. Floyd-Smith, two others being temporarily housed for the owner. A film, "Birth of a Year", in which a number of young animals were photographed, was made by Miss Evelyn Spice, with the co-operation of Dr Julian Huxley.

At Whipsnade, an outdoor reptiliary is being built with a legacy left by Miss Julia Lindley; the Duke of Bedford presented two Mongolian wild horses; and a white-tailed gnu, a species extinct except in zoos, was born.

Chester Zoo launched an appeal for funds, and the Duke of Westminster opened his gardens at Eaton to help this. An open-air lion enclosure is being constructed. The Governor of Nigeria presented a lioness, and the Chief Justice a crowned crane and other animals. At Dudley a compound for sun-bears is being built, and the Earl of Shrewsbury presented a baby sun-bear. The proprietor of the Liverpool Zoo announced his intention of retiring and selling his zoo. A new restaurant, antelope and zebra house, and aviaries for big birds of prey were built at Maidstone Zoo.

Sir Ali bin Salim presented a young lion from East Africa to the Edinburgh Zoo. Plans for a Glasgow Zoo were furthered by an "Appeal Dinner", at which the Duke of Atholl spoke. Dr. Farrer was succeeded by Lt.-Col. A. G. Doherty as superintendent of the Dublin Zoo, where a wolf park, on a natural hill, was completed.



Fox Photos]
THE FOUR TIGER CUBS BORN TO TOM AND RANEE AT WHIPSNADE ZOO IN JULY 1938, WITH THE MOTHER



Sport & General]
THE BABY GIANT PANDA, AGED NINE MONTHS, WITH HIS KEEPER AT THE LONDON ZOO, DEC. 28, 1938

British Empire. The 300 animals at Johannesburg Zoo are being housed in naturalistic dens and aviaries. Dr. Burgess Barnett, formerly of the London Zoo, was appointed superintendent of the Rangoon Zoo.

United States. A British ship, the "City of Salisbury", carrying animals from Calcutta for the United States zoos, sank off Graves Banks, near Boston harbour, in a fog. Snakes, monkeys, and rare birds were salvaged. One of the young giant pandas in Chicago Zoo died through swallowing a twig. The New York Zoo acquired a baby giant panda, three months old. The animal was presented by the West China Union University, and the New York Zoo paid only the cost of transport. Dr. Raymond L. Ditmars, curator of reptiles and mammals, was awarded a fellowship of the American Institute. After 27 years, the oldest gibbon in captivity died in the Philadelphia Zoo.

Europe. The Geneva Zoo, a private enterprise, went bankrupt, and money had to be subscribed by animal welfare societies to save the animals from starvation. The Moscow City Zoo lost its prize leopard, which was attacked by a cross between a lion and a tiger. Munich Zoo exchanged a male orang-utan for a stallion wild Mongolian horse bred at Whipsnade. The Paris Zoo received a collection of animals brought back from the West Indies by Lord Moyne.

Africa. Giza Zoological Gardens, near Cairo, recently celebrated the birthday of a shoe-bill stork brought from the Sudan 36 years ago by Major Flower.

South America. Buenos Aires Zoo will shortly move into £1 million new quarters. (V. R.)

ZOOLOGY. A comprehensive review of current knowledge of the phylogeny of the Annelida, Arthropoda, and Onychophora has been published by Snodgrass [1] There is nothing revolutionary in the scheme of relationships which he propounds, but the case for accepting it is stated in new terms His views as to the origin and functions of the cœlom, for example, are interesting if somewhat hypothetical. In this particular he may be tilting at the indifferent windmills of established faith, but he is an antagonist sufficiently well armed to be worth refuting. A valuable supplement to parts of his monograph is the article by Garstang and Gurney [2] on the interrelationships of the Trilobites and the Crustacea, a most persuasive plea for regarding the latter as deriving directly from early Trilobite stock, in particular from the families Mesonacidæ and Olenellidæ. Their arguments are based largely on Trilobite-like features in the Devonian crustacean Lepidocaris, described by Scourfield, and in part on the similarity of the nauplius larva with the early larval stages of Cambrian Trilobites An apparent weakness of this seductive theory is the scant account taken of Walcott's Cambrian Crustacea.

The book which includes this latter article is a valuable critique of many branches of zoology. On the morphological side, Baylis reviews the phylogeny of the Platyhelmia and Nematoda, especially of the parasitic forms in relation to host specificity and the evolution of the hosts themselves. Spencer discusses points about the evolution of the Echinoderms, and there are short articles by Moy-Thomas on dermal bones in fishes and by Tucker on the origin of birds There is a stimulating if highly speculative disquisition by Young on the conditions antecedent to the evolution of higher types of behaviour and on the structural pre-requisites of the central nervous system Like most of those who have been strongly influenced by Pavlov and Watson, he tends to ignore the difficulties presented by the work of the German school as, for example, the paradoxical " purposiveness " of the behaviour of Echinoderms described by von Uexkuell. The present status of evolution from a more theoretical and general standpoint is treated in articles by Poulton, Huxley, Ford, Haldane, and Richards.

Outstanding advances have been made in the comparative study of the senses of animals. Adrian, Craik, and Sturdy [3] have investigated the response of the auditory organs to sound in a number of lower vertebrates (eel, tortoise, alligator, frog). In all these cases they were able to detect both a nervous response to sound and an aural microphonic effect from the inferior part of the labyrinth apparently comparable to the Wever and Bray phenomenon of the mammalian cochlea. These responses were elicited only by a comparatively narrow band of frequencies at the lower end of the human auditory spectrum. Since of these animals only the alligator has a cochlea and that a rudimentary one, these results seem to contra-indicate the belief of Davis that the source of the Wever and Bray phenomenon is the basilar membrane or the organ of Corti itself. It is significant that the upper limit of frequency to which a detectable nervous response could be obtained rose sharply with increasing temperature.

The ampullæ of Lorenzini, previously regarded as an integral part of the *lateralis* system of elasmobranch fish and therefore as receptors for mechanical stimuli, have been shown by Sand [4] to be extremely sensitive to temperature changes and insensitive to deformation. These receptors are fairly rapidly adapting, but a sudden change of temperature of as little as 0·2° C. is adequate to produce a perceptible change in the frequency of the nervous response.

Pringle [5] has shown that the function of the campaniform sensilla of insects, believed by McIndoo to be olfactory, is in fact the appreciation of stresses in the exoskeleton He has also shown that certain groups of hair sensilla in insects respond primarily to movements of one part of the exoskeleton upon another, and has established a strong probability that both these and the campaniform sensilla are concerned in proprioception

Hartline [6] has described the nervous response of fibres from both the internal and external retinæ of the eyes situated on the edge of the mantle of the scallop (Pecten). The external retina gives a positive response to an increase in illumination, while the internal responds only to a decrease This is the only case up to the present in which an " off-effect " has been described in a primary visual sense-cell. It may be correlated with the marked shadow reaction which may be induced in the intact scallop under appropriate conditions.

Hulbert and Yonge [7] have produced evidence that the osphradia of gastropod molluscs, previously believed to be olfactory, are responsive to the size and density of particles in the inhalent current, *i e* they belong to the group of receptors for mechanical rather than for chemical stimuli. These results are hard to reconcile with the earlier work of Copeland, and it is possible that the osphradia may be mixed organs sensitive to more than one mode of stimulation.

Vanderplank [8] in a behavioural study of the tawny owl, has shown that its visual spectrum extends far beyond the human, particularly at the infra-red end. It is conceivable that this sensitivity to " heat " waves may be of service in enabling the bird to detect small mammals in the dark.

The study of effector systems has been advanced by a series of papers by Harreveld and Wiersma in which physiological evidence for a double or in some cases a triple innervation of crustacean muscle has been supported by identification of the individual axons themselves. In the case of the Crustacea so far examined, there are always an inhibitory nerve and one or two excitatory fibres whose effects differ qualitatively. A double excitatory system has been indicated by Young in cephalopods, by Pumphrey in lamellibranchs, and by Pringle in insects, though it is by no means clear that these two groups of excitatory fibres are homologous in the different orders. It is, however, clear that double innervation is widespread in invertebrates, and that a " final common motor path " is more peculiarly a vertebrate characteristic than had been supposed. How far this concept is valid even for vertebrates depends on the weight assigned to the experiments of Orbeli, Maibach, and others, which purport to show that sympathetic innervation plays a significant part in the normal contraction of vertebrate muscle.

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(R. J. P.)

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All headings, whether of one or more words, are arranged alphabetically as though they were a single word up to the punctuation mark.

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All references show the page number and the quarter of the page by means of the letters a, b, c, d, signifying respectively the upper and lower halves of the first and second columns, thus:

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